PINADZHYAN, V.V.; INDZHIKYAN, Ya.A.

Deformation of plastic steel under the combined effect of stretching and torsion. Izv.AN Arm.SSR.Ser.tekh.nauk. 12 no.1:53-56 '59. (MIRA 12:4)

1. Institut stroymaterialov i sooruzheniy Ministerstva stroitel'stva Arm.SSR.
(Steel--Testing) (Deformation (Mechanics))

ZHURBAYEV, M.S.

Errors of the method of difference for second-order elliptic equations. Vest. AN Kazakh. SSR 19 no.11:93-96 N'63.
(MIRA 17:5)

INERBAYEV, M.S.

Errors of difference solutions to the second and third boundary value problems for elliptic equations. Metod. vych. no.2:50-59 '63. (MIRA 18:11)

INES, Z.

New safety measures for high-tension electric cable network in mines. p. 115.

PRZEGLAD GORNICZY. Stowarzyszenie Naukowo-Techniczne Inzynierow i Techników Gornictwa. Katowice, Poland, Vol. 15, No. 3, March, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September, 1959. Uncl.

S/271/63/000/003/012/049
A060/A126

AUTHORS: Avraamov, I.S., Ineshin, A.P.

TITLE: Engineering logic and the automation of production

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 3, 1963, 55, abstract 3A312 (Uch. zap. Tomskiy un-t, 1962, no. 41, 156 - 170)

TEXT: The authors describe a digital servosystem designed for controlling a large class of mechanisms connected with the displacement and precise stopping at various points. To such mechanisms belong: factory cranes, pressure units of rolling mills, mine elevators, ingot cars, etc. The system contains a memory unit for the coordinates of the exact technical stopping point, a memory unit of the current position of mechanisms, a feedback transducer and computer unit. With the aid of the methods of the algebra of logic a reliable computer network is worked out. The reliability of its operation is attained through the application of a reflecting code, the introduction of DC feedbacks and of stabilizing networks which protect the flip-flops from pulse noise. There are 9 figures and

Card 1/2

Engineering logic and the automation of production

4 references.

A. S.

[Abstracter's note: Complete translation]

Card 2/2

B/271/63/000/003/012/049
A060/A126

L 05410-67 EWT(d)/EWP(v)/EWT(k)/EWP(h)/EWP(l)

ACC NR: AT6022758 SOURCE CODE: UR/2563/65/000/259/0107/0114

34
33
5

AUTHOR: Drannikov, V. G.; Yesin, A. I.; Ineshin, A. P.; Sevast'yanov, V. A.

ORG: None

TITLE: Analysis of the dynamics of a self-saturating magamp drive with intermediate semiconductor amplifiers

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 259, 1965. Perekhodnyye protsessy v avtomatizirovannom elektroprivode (Transient processes in automated electric drive), 107-114

TOPIC TAGS: magnetic amplifier, machine tool, industrial automation

ABSTRACT: The authors consider the use of intermediate semiconductor amplifiers as a means for reducing the time constant in self-saturating magnetic-amplifier circuits used in combination with electric motors for driving the feed screws of machine tools. An analysis of transition processes in this type of system shows that linear operation of the intermediate semiconductor amplifier in self-saturating magamp-motor drive combinations has no noticeable effect on the time constant of the drive. The interference voltage acting through the correction circuit in an actual drive puts the intermediate amplifier into conditions of artificial switching with a frequency of 300 cps which increases the time of the transition process by a factor of more than 1.5. Class D

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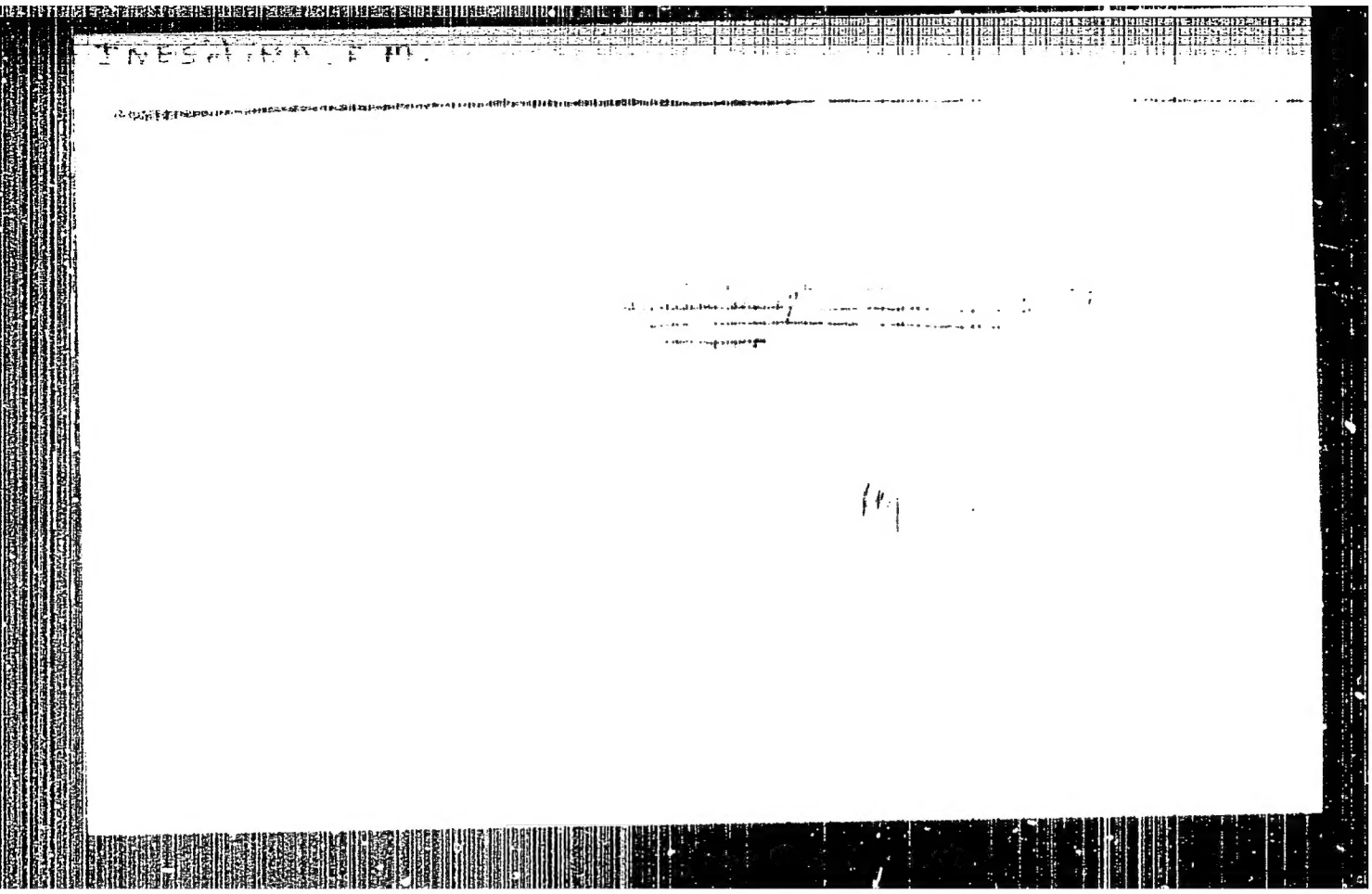
L 05410-67

ACC NR: AT6022758

intermediate semiconductor rectifiers with pdm may be used satisfactorily for wide-range control in self-saturating magamp drives. The small losses in the output transistor of the amplifier in both the open and closed states result in considerable power delivery at high efficiency to the control circuits of the magnetic amplifier. The operation of this transistor is nearly independent of the scatter in its parameters and variations in ambinet temperature. The frequency of the intermediate amplifier must be selected with regard to the particular features of the specific magnetic amplifier circuit. The use of low-interference stabilization circuits in conjunction with high-power class D intermediate semiconductor amplifiers provides high-quality drives for wide-range speed control based on self-saturating magnetic amplifier circuits. Orig. art. has: 5 figures, 2 formulas.

SUB CODE: 09, 13/ SUBM DATE: None/ ORIG. REF: 005

Card 2/2



Ineshina, I. M.

Category: USSR/Analytical Chemistry - General Questions. G-1

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30945

Author : Ginzburg V. L., Alekseyenko Ye. F., Belokrinitskaya Ye. Ye., Vitushkina I. N., Ineshina F. M.

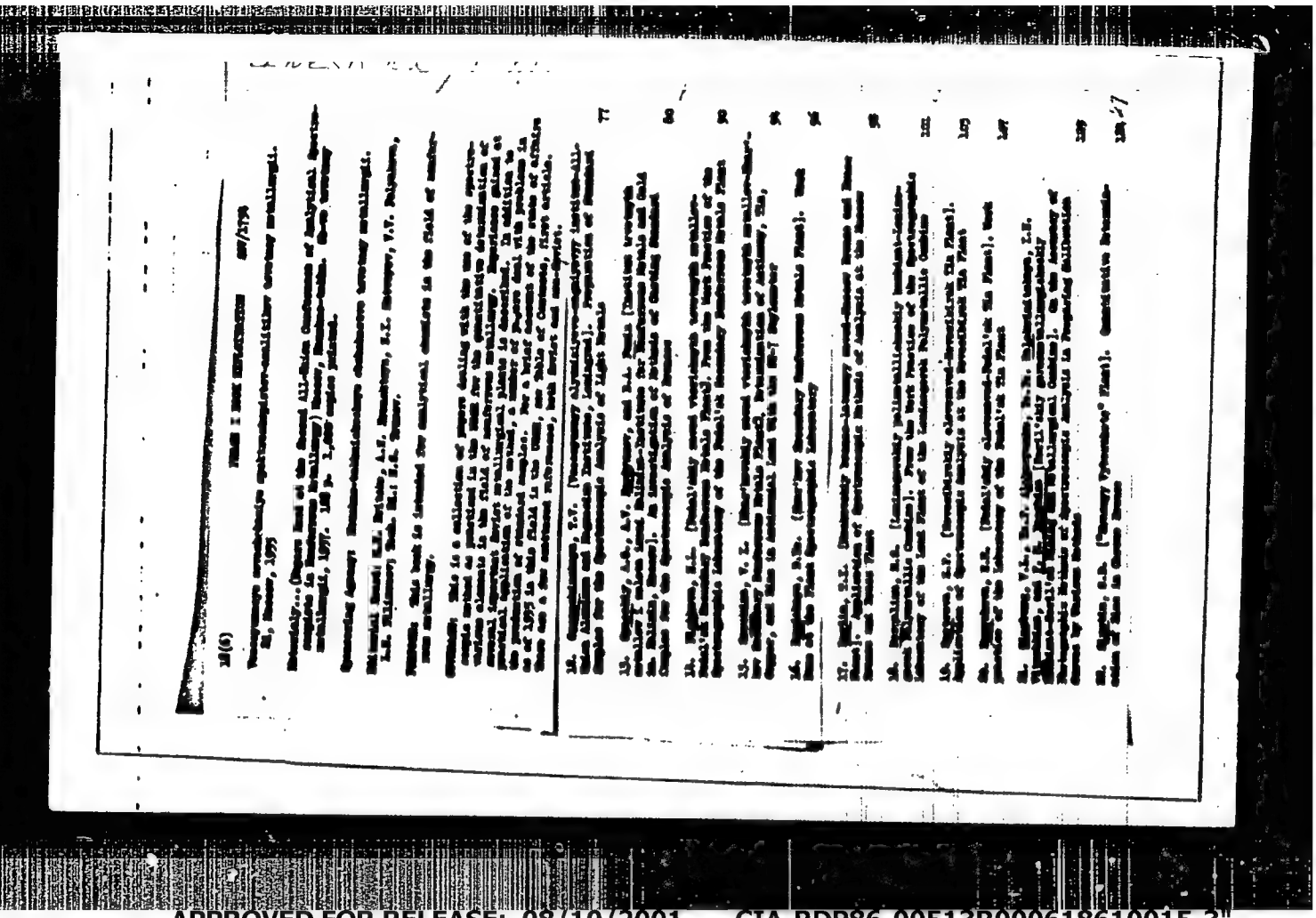
Inst : not given

Title : Accuracy of Photographic Methods of Spectral Analysis

Orig Pub: Zavod. laboratoriya, 1956, 22, No 11, 1331-1333

Abstract: A comparison was made of the accuracy of analyses of fused nickel, copper regulus, fused cobalt and cathodic nickel, according to calibration graphs in $\Delta$ S, lg C coordinates, and in accordance with the solid graph method. Determinations were made of Cu, Fe, Au, Pt, Pd, Ni, Si, Mn, Pb, Sb, Bi, Sn, Co, at concentrations from several thousandth to decimal fractions of one percent, with spectrum excitation in arc discharge of direct and alternating current, and photographic recording on plates of type I, II and III. In most instances no substantial differences were found in the magnitude of errors with different calibration graphs.

Card : 1/1 -18-



PHASE I BOOK EXPLOITATION SOV/6260

Gurvich, Lev Veniaminovich, Georgiy Akopovich Khachkuruzov, Vadim Andreyevich Medvedev, Inessa Veniaminovna Veyts, Georgiy Andreyevich Bergman, Vladimir Stepanovich Yungman, Nina Petrovna Rtishcheva, Lidiya Fedorovna Kuratova, Georgiy Nikolayevich Yurkov, Amaliya Abramovna Kane, Boris Fedorovich Yudin, Boris Isidorovich Brounshteyn, Viktor Feodoseyevich Baybuz, Valeriy Aleksandrovich Kvlividze, Yevgeniy Aleksandrovich Prozorovskiy, and Boris Aleksandrovich Vorob'yev.

Termodinamicheskiye svoystva individual'nykh veshchestv; spravochnik v dvukh tomakh. tom 1: Vychisleniye termodinamicheskikh svoystv; tom 2: Tablitsy termodinamicheskikh svoystv (Thermodynamic Properties of Individual Substances; Reference Book in Two Volumes. v. 1: Calculation of Thermodynamic Properties; v. 2: Tables of Thermodynamic Properties). 2d ed., rev. and enl. Moscow, Izd-vo AN SSSR, 1962. 1161 and 916 p. 4000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut goryuchikh iskopayemykh; and Gosudarstvennyy komitet Soveta Ministrov SSSR

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Thermodynamic Properties (Cont.) SOV/6260

po khimii. Institut prikladnoy khimii.

Resp. Ed.: V. P. Glushko, Academician, L. V. Gurvich, G. A. Khachkuruzov, I. V. Veyts, and V. A. Medvedev; Ed. of Publishing House: K. P. Gurov; Tech. Ed.: V. G. Laut.

PURPOSE: This reference book may be used in scientific-research and experimental-design work in institutes, design offices, and schools of higher education, as well as for training specialists in chemical thermodynamics and thermal physics.

COVERAGE: Volume 1 of this work deals with methods for calculating thermodynamic properties and with the selection of constants required for the calculations. Volume 2 contains tables of thermodynamic properties (reduced thermodynamic potential, entropy, enthalpy, and the logarithm of the dissociation or ionization constants of equilibrium) compiled, where data were lacking, on the basis of published and unpublished material from a number of Soviet research institutes. Thermodynamic properties for the ideal gas

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Thermodynamic Properties (Cont.)

SOV/6260

state are presented in table form for 335 gases, 44 liquids, and 45 solids compounded from 33 chemical elements and their isotopes, viz.: H, D, T, He, Li, Be, B, C, N, O, F, Ne, Na, Mg, Al, Si, P, S, Cl, Ar, K, Ca, Br, Kr, Re, Sr, Zr, I, Xe, Cs, Ba, Hg, and Pb. Thermodynamic properties are given for the following 22 gases in the range from room temperature to 20,000°K: H, $H^+$, $H^-$, O, $O^+$, $H_2$, $O_2^+$, $O_2$, OH, $OH^+$, $H_2O$, N, $N^+$, $N_2$, $N_2^+$, NO, $NO^+$, C, $C^+$, CO, $CO^+$, and $e^-$; for the 14 least stable gases up to 4000°K; and for the remaining 299 gases up to 6000°K. Virial coefficients for 34 gases are also given up to 6000°K.

TABLE OF CONTENTS (Volume 1) [Abridged]:



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INEV, V.

INEV, V. Improving the technological work in shunting is an important condition for reducing the stopover of the railroad cars. p. 8. Vol. 8, no. 6, 1956. TRANSPORTNO DELO. Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol 6, No. 4--April 1957

INFANT'YEV, A.A., gornyy inzh.; MITROFANOV, A.I., gornyy inzh.

Experience in deep drainage at the Yakovleve mine in the Kursk Magnetic Anomaly. Gor. zhur. no.11:16-22 N '63.

(MIRA 17:6)

1. Yakovlevskiy rudnik Kurskoy magnitnoy anomalii.

18(5),14(5)

AUTHORS: Gusev, A.M., Red'ko, L.A., and Infant'yev, A.N. Mining Engineers

SOV/127-59-2-3/21

TITLE: Preliminary Considerations Concerning the Methods of Opening, and Ways of Mining in the Yakovlevskoye Deposit Area (Proyektnyye soobrazheniya o metodakh vskrytiya i sposobakh razrabotki Yakovlevskogo mestorozhdeniya)

PERIODICAL: Gornyy zhurnal, 1959, Nr 2, pp 10-15 (USSR)

ABSTRACT: The authors first give a concise description of the Yakovlevskoye and Pokrovskoye iron ore deposits. The Yakovlevskoye ore stratum now being examined is 10 km long, about 220 m wide. Its thickness varies from a few meters to 350 m and it has about 1,500 million tons of 61.4% rich iron-ore. There are 6 wet strata which will give 5,000 to 6,000 cu m of water per hour when actual exploitation start. The authors say that the scheduled annual output is 15 million tons of ore. The mean exploitation coefficient will be 20.2 t/m$^2$/year. The floors will sink

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by about 6.9 m per year. The deposits will be exhausted in about 50 years. The authors defend the plans and advice of the Yuzhgiproruda Institute as opposed to the projects elaborated by the Institut gornogo dela AN SSSR (Institute of Mining attached to the Soviet Academy of Sciences). They especially argue against adapting the one-shaft-complex plan advocated by the Academy of Sciences. The proposed floor height is 70 to 80 m. The first 40% of the ore deposits are to be mined within 25 years, the next 27% within a further 14 years. A description and illustration of the actual preparatory work in the mines follows. Miner's trucks run by electric motors will each have 25 tons capacity. As far as the actual exploitation is concerned, the authors particularly recommend the self-collapsing floor system. Drainage operations will be carried out in 3 stages: 1) deep-working pumps will first discard the pressure

Card 2/3

Preliminary Considerations Concerning the Methods of Opening, and Ways of Mining in the Yakovlevskoye Deposit Area

of the subsoil waters; 2) a ring of drain shafts and galleries will be cut around the carbon limestone stratum; 3) then the ore layers will be drained. The floors placed at the bottom of the deposit must be equipped with a pumping system delivering 100 or 200 cu m of water per hour. There are 3 schematic diagrams.

ASSOCIATION: Yuzhgiproruda, Khar'kov

MASHKET, K.M., inzh; INFANT'YEV, A.N., inzh.

Huge mine in the Kursk Magnetic Anomaly. Shakht. stroi. 5 no.5:6-8 My '61. (MIRA 14:6)

1. Gosstroy SSR (for Mashket). 2. Yakovlevskiy rudnik Kurskoy magnitnoy anomalii (for Infant'yev).
(Kursk Magnetic Anomaly--Iron mines and mining)

INFANT'YEV, A.N., inzh.

Questions of principle in opening thick, deep-lying deposits of rich iron ores in the Kursk Magnetic Anomaly. Izv.vys.uchab.zav.;gor.zhur. 7 no.7:23-27 '64. (MIRA 17:10)

1. Yakovlevskiy rudnik Belgorodskoy oblasti. Rekomendovana kafedroy razrabotki rudnykh mestorozhdeniy Instituta gornogo dela.

IMENITOV, V.R., prof., doktor tekhn. nauk; CHIAYEV, T.I., gornyy inzh.; INFANT'YEV, A.N.

Investigating the behavior of sand and clay depositions in the mining of iron ore deposits in the Kursk Magnetic Anomaly. Gor. zhur. no.9:22-23 S '64. (MIRA 17:12)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki (for Imenitov, Chiayev). 2. Direktor Yakovlevskogo rudnika Kurskoy magnitnoy anomalii (for Infant'yev).

MUSHEGYAN, A.M.; GRIBANOV, L.N.; INFANT'YEV, V.I.

Valuation methods for the saksaul forests of Kazakhstan. Trudy Alma-At.bot.sada 3:54-61 '56. (MLRA 10:3)
(Kazakhstan--Saksaul) (Forests and forestry--Valuation)

INFANT'YEV, V[illegible]. I. Cand Agr Sci -- (diss) "Types of apple tree plantings in the Dzhungar Ala-Tau, their natural renewal ~~restoration~~, growth, and productivity." Alma-Ata, 1957. 18 pp; 1 sheet tables 19 cm. (Min of Agr USSR. Kazakh State Agr Inst). 100 copies. (KL, 22-57, 106).

INFANT'YEV, V.I.

USSR / Forestry. Dendrology. K-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24877.

Author : Mushegyan, A. M.; Gribanov, L. N.; Infant'ev, V.I.
Inst : Not given.
Title : On the Methods of Forest Valuation of the Haloxylons of Kazakhstan.

Orig Pub: Lesn. kh-vo, 1957, No 8, 33-36.

Abstract: The exceptionally and increasingly difficult determination of the usual forest valuation indices of haloxylons is pointed out. It is proposed to divide the plantings into the following age groups: saplings, those ripening and those ripe. The criteria of the plantings of the black haloxylons ought to be established according to the proposed local table of the criteria, compiled on the basis of 120 test areas. A table to determine reserves

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USSR / Forestry. Dendrology. K-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24877.

Abstract: of the haloxylon plantings according to the criteria, the average diameter at the surface of the ground and the degree of denseness of the plantings, is suggested.

Card 2/2

INFANT'YEVA, N. S.

KARKLINS, J.; LIEPA, E.; INFANTYEVS, B.

Latvijas Valsts universitates Zinatniskie raksti (Transactions of the Latvian State University); a review of Vols. 11-16. Vestis latv ak no.9:191-196 '59. (EEAI 9:10)
(Latvian periodicals)
(Academy of Sciences of the Latvian S.S.R.)

INFANTYEVS, B.

Materials on Latvian cultural history in the archives of Moscow and Vilna. Vestis Latv ak no.2:185-188 '60. (EEAI 10:1)
(Latvia--History)
(Russia--Archives)
(Lithuania--Archives)

INFAROVICH, A.P.

Suture of penetrating wounds of the heart. Zdrav.Bel. 8 no.7:74-75 Jl '62. (MIRA 15:11)

1. Iz Volozhinskoy rayonnoy bol'nitsy (glavnyy vrach S.Z.Kipel').
(HEART—WOUNDS AND INJURIES)

DEMIANSKI, M.; INFELD, E.

Note on the field method of obtaining the conservation laws and solving the two body problem in general relativity. Bul Ac Pol Mat 9 no.9:693-696 '61.

1. Institute of Theoretical Physics, University, Warsaw and Trinity College, Cambridge. Presented by L.Infeld.

DEMIANSKI, Marek; INFELD, Eryk

The field method of obtaining the conservat on laws and the Lagrangian. Acta physica Pol 21 no.5:469-479 My '62.

1. University of Warsaw and Trinity College.

DEMIANSKI, M.; INFELD, E.

The radiative energy and the motion of particles. Bul Ac Pol mat 11 no.4:223-226 '63.

1. Institute of Physics, University, Warsaw, and Institute for Nuclear Research, Warsaw. Presented by L. Infeld.

INFELD, E.

On the solution of linearized equations of magnetohydrodynamics in nonhomogeneous magnetic fields. Bul Ac Pol mat 11 no. 11: 707-713 '63.

1. Institute for Nuclear Research, Warsaw. Presented by M. Danysz.

INFELD, E.

Some exact solutions of the equations of magnetohydrodynamics for magnetic plane-symmetrical fields. Bul Ac Pol mat 12 no.4: 233-238 '64.

1. Institute of Nuclear Research, Warsaw. Presented by M. Danysz.

INFELD, Leopold

The equations of motion in general relativity theory and the action principle. Acta physica Pol 16 no.3:177-210 '57.

1. Instytut Fizyki, Polska Akademia Nauk, Warszawa.

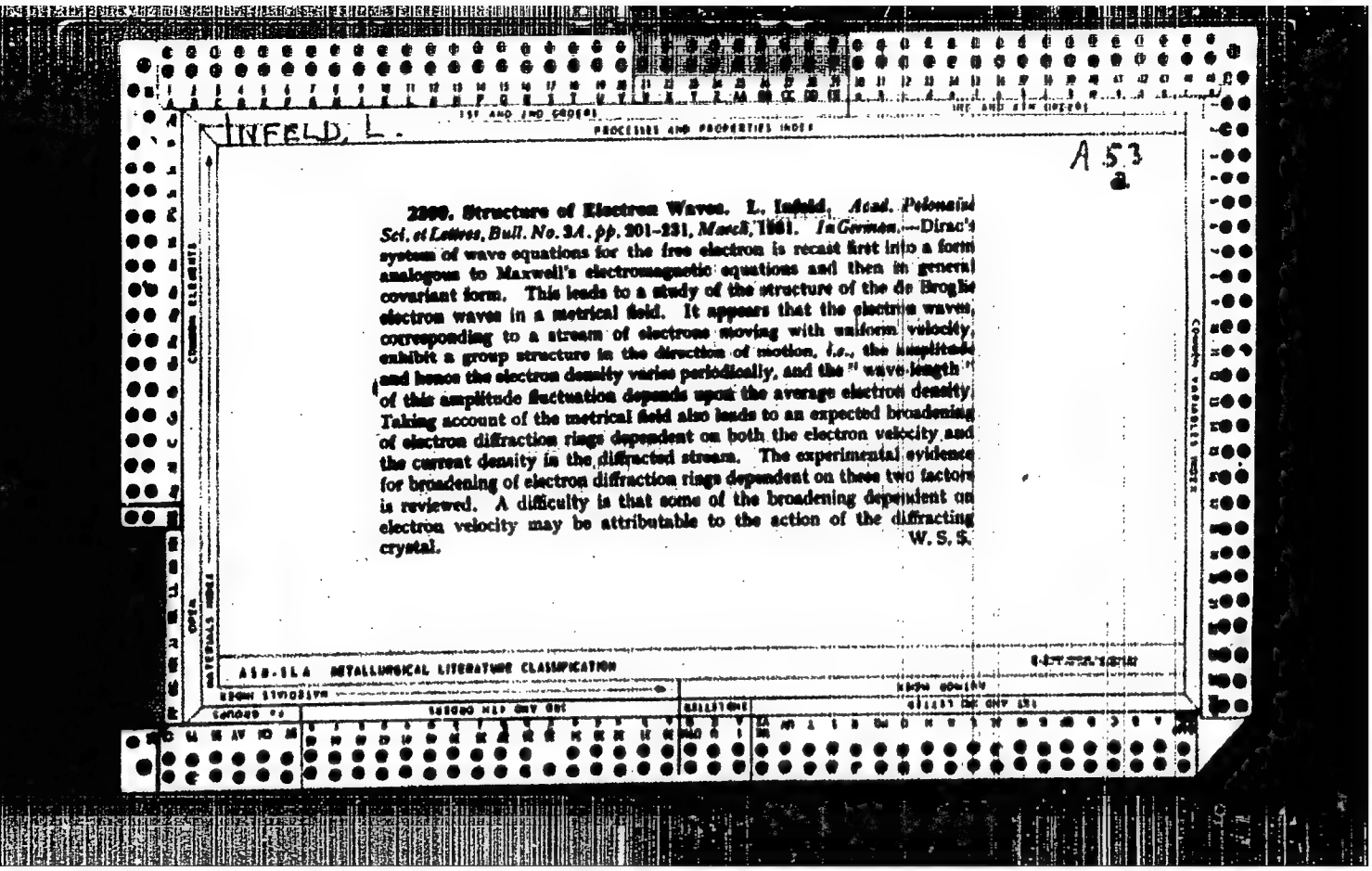
INFELD, Leopold

On studies of young scholars abroad. Nauka polska 10 no.3:91-93 My-Je '62.

1. Czlonek rzeczywisty Polskiej Akademii Nauk, Warszawa.

INFELD, LUDWIK.

INFELD, LUDWIK. Structure of the Universe. Wiedza i zycie, 1949, v. 18, no. 5, p. 5, p. 545-556.

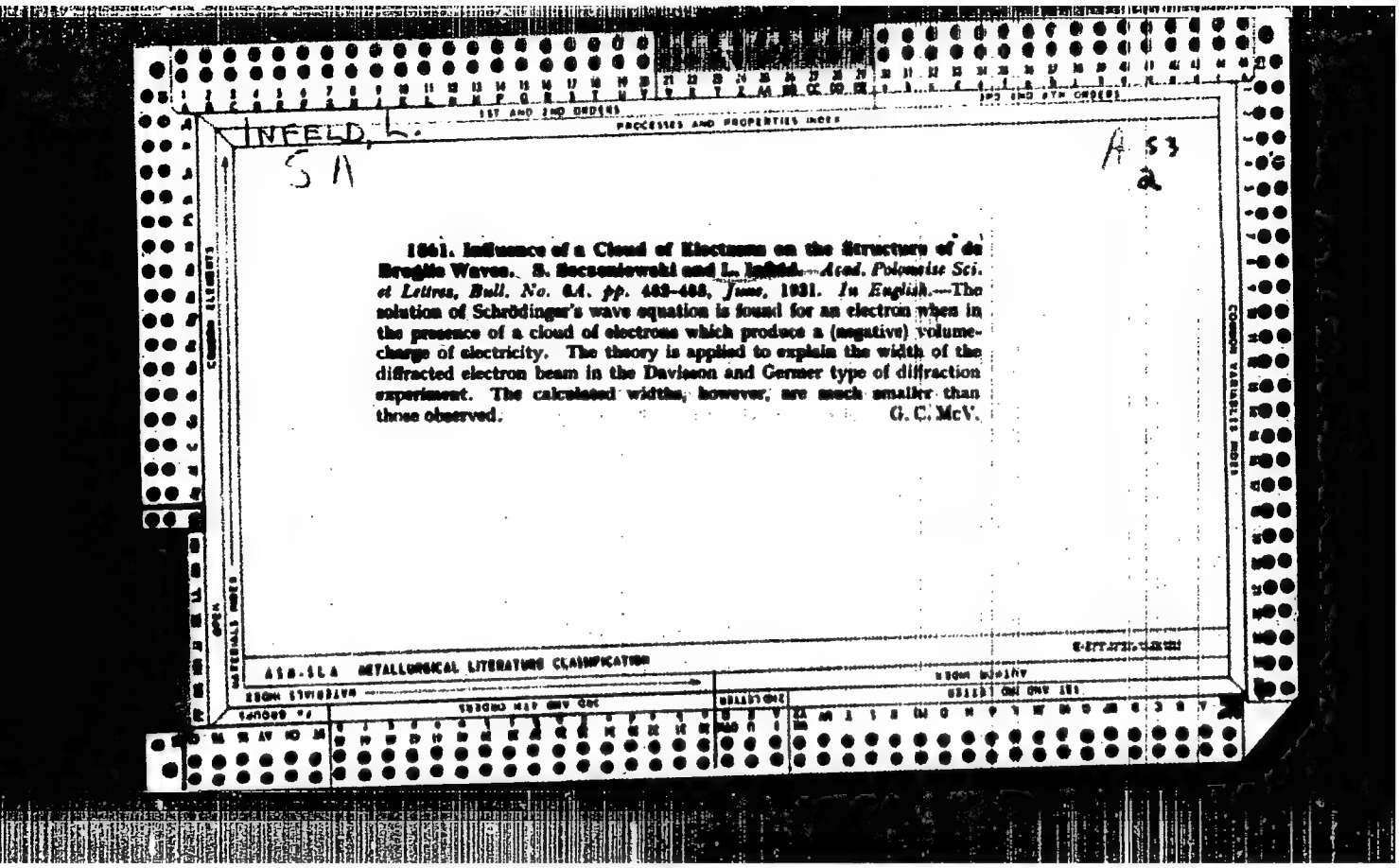


INFELD, L.

A 53
a

**2880. Structure of Electron Waves. L. Infeld.** *Acad. Polonaise Sci. et Lettres, Bull. No. 3A. pp.* 201–231, *March*, 1951. *In German.*—Dirac's system of wave equations for the free electron is recast first into a form analogous to Maxwell's electromagnetic equations and then in general covariant form. This leads to a study of the structure of the de Broglie electron waves in a metrical field. It appears that the electron waves, corresponding to a stream of electrons moving with uniform velocity, exhibit a group structure in the direction of motion, *i.e.*, the amplitude and hence the electron density varies periodically, and the "wave-length" of this amplitude fluctuation depends upon the average electron density. Taking account of the metrical field also leads to an expected broadening of electron diffraction rings dependent on both the electron velocity and the current density in the diffracted stream. The experimental evidence for broadening of electron diffraction rings dependent on these two factors is reviewed. A difficulty is that some of the broadening dependent on electron velocity may be attributable to the action of the diffracting crystal. W. S. S.

A53-5LA METALLURGICAL LITERATURE CLASSIFICATION



INFELD, L.

S A

A 53
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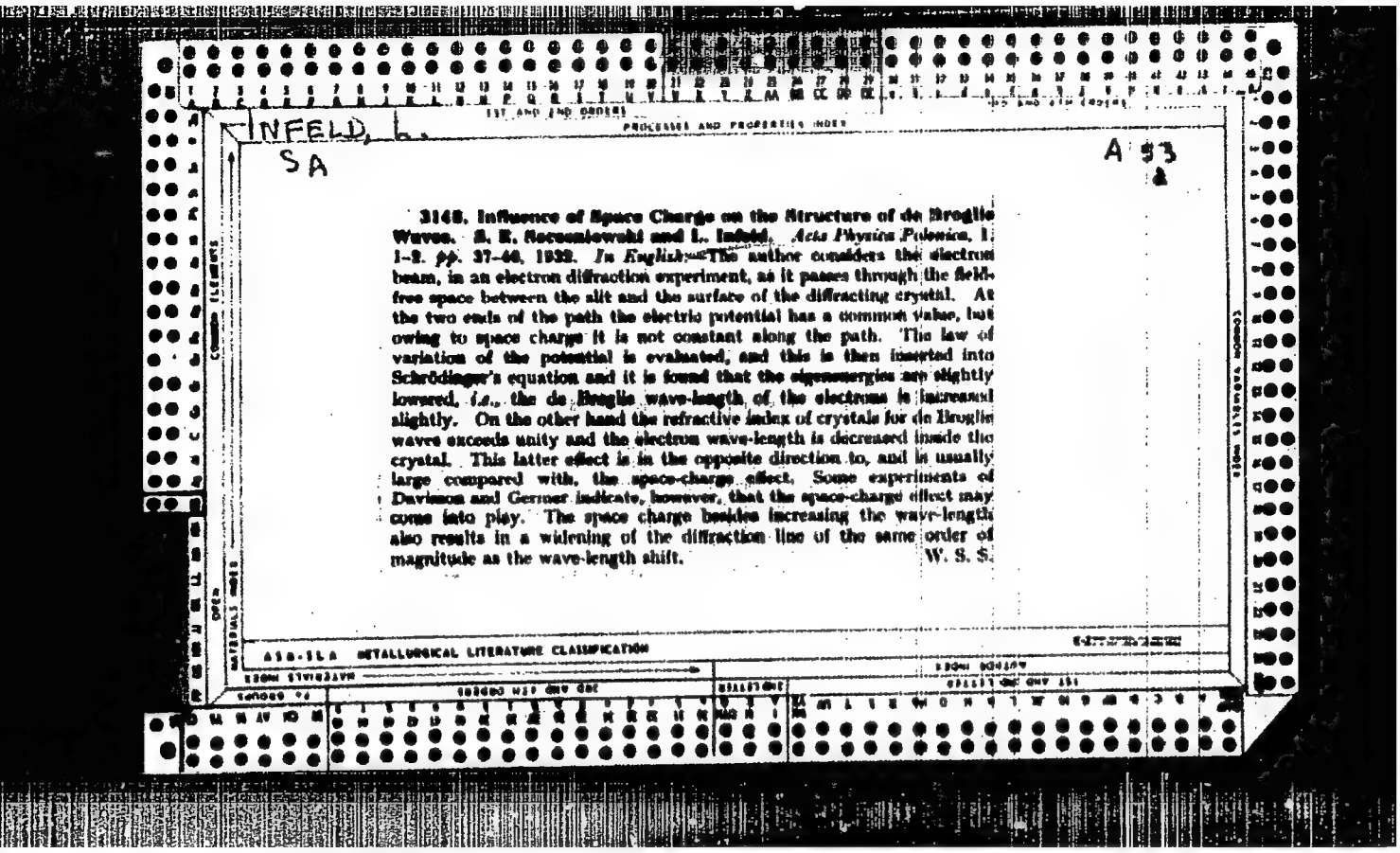
1861. **Influence of a Cloud of Electrons on the Structure of de Broglie Waves.** S. Szczeniowski and L. Infeld.—*Acad. Polonaise Sci. et Lettres, Bull. No.* 6A. *pp.* 463–468, *June,* 1931. *In English.*—The solution of Schrödinger's wave equation is found for an electron when in the presence of a cloud of electrons which produce a (negative) volume-charge of electricity. The theory is applied to explain the width of the diffracted electron beam in the Davisson and Germer type of diffraction experiment. The calculated widths, however, are much smaller than those observed. G. C. McV.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



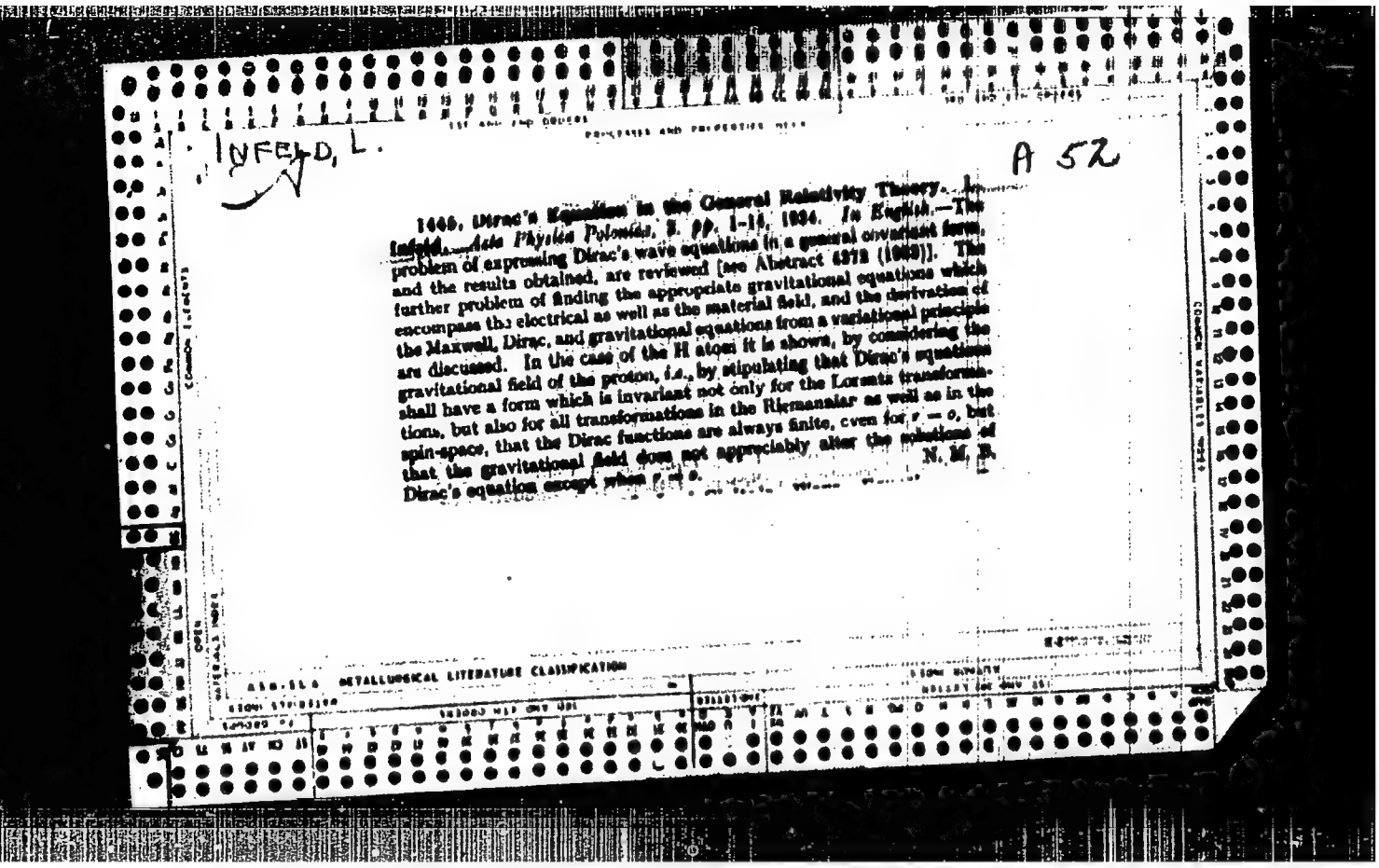
INFELD, L.

SA

A 53

**3148. Influence of Space Charge on the Structure of de Broglie Waves.** S. K. Szczeniowski and L. Infeld. *Acta Physica Polonica*, 1, 1–2, pp. 37–40, 1932. *In English.*—The author considers the electron beam, in an electron diffraction experiment, as it passes through the field-free space between the slit and the surface of the diffracting crystal. At the two ends of the path the electric potential has a common value, but owing to space charge it is not constant along the path. The law of variation of the potential is evaluated, and this is then inserted into Schrödinger's equation and it is found that the eigenenergies are slightly lowered, *i.e.*, the de Broglie wave-length of the electrons is increased slightly. On the other hand the refractive index of crystals for de Broglie waves exceeds unity and the electron wave-length is decreased inside the crystal. This latter effect is in the opposite direction to, and is usually large compared with, the space-charge effect. Some experiments of Davisson and Germer indicate, however, that the space-charge effect may come into play. The space charge besides increasing the wave-length also results in a widening of the diffraction line of the same order of magnitude as the wave-length shift. W. S. S.

A 53-5 LA METALLURGICAL LITERATURE CLASSIFICATION

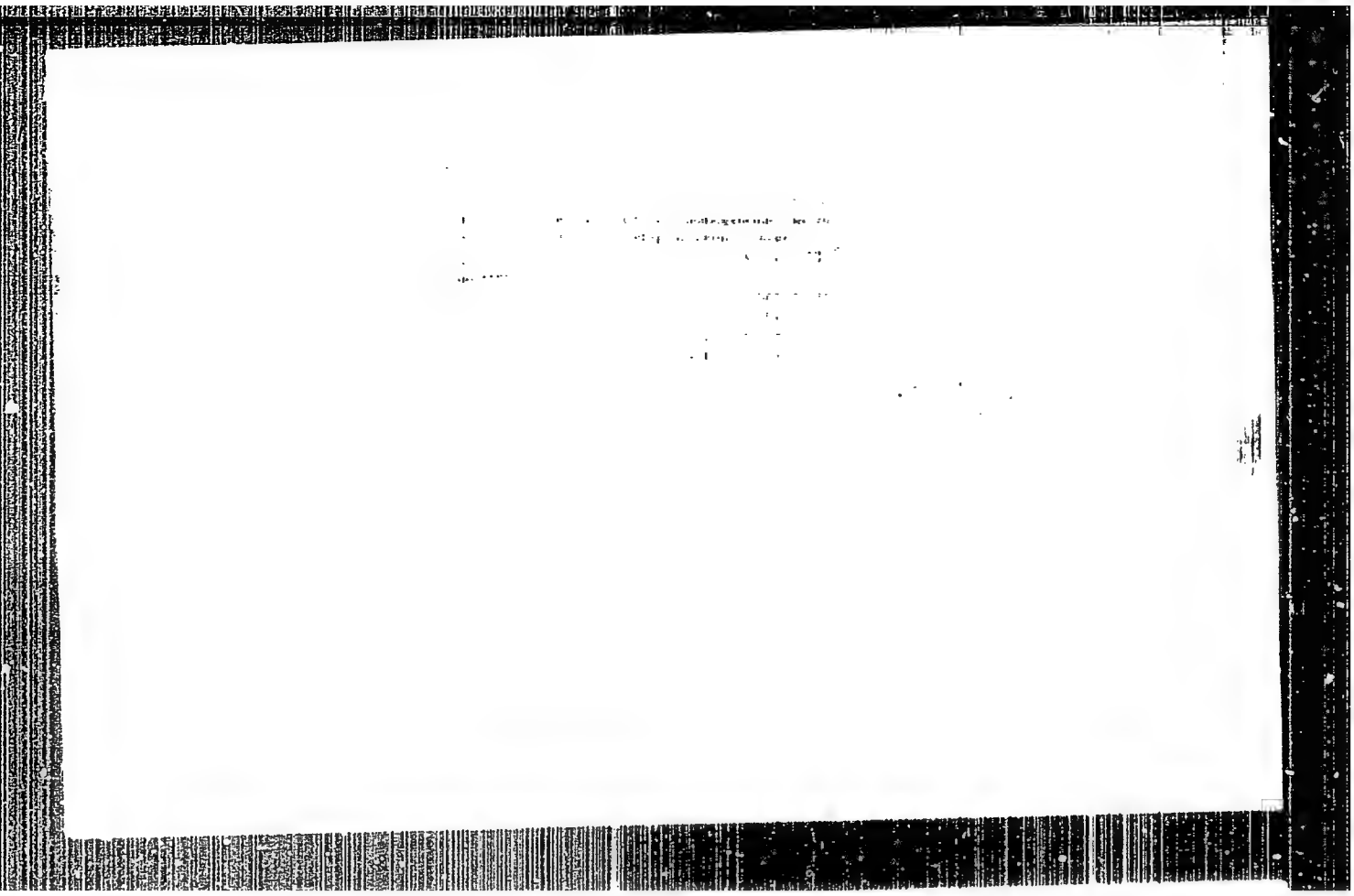


INFELD, L.

A 52

1465. Dirac's Equation in the General Relativity Theory. L. Infeld. *Acta Physica Polonica*, 3, pp. 1–11, 1934. *In English.*—The problem of expressing Dirac's wave equations in a general covariant form, and the results obtained, are reviewed [see Abstract 4272 (1933)]. The further problem of finding the appropriate gravitational equations which encompass the electrical as well as the material field, and the derivation of the Maxwell, Dirac, and gravitational equations from a variational principle are discussed. In the case of the H atom it is shown, by considering the gravitational field of the proton, *i.e.*, by stipulating that Dirac's equations shall have a form which is invariant not only for the Lorentz transformations, but also for all transformations in the Riemannian as well as in the spin-space, that the Dirac functions are always finite, even for $r \to 0$, but that the gravitational field does not appreciably alter the solutions of Dirac's equation except when $r \neq 0$.

N. M. B.



APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000618610015-3"

INFELD, L.

Mathematical Reviews.
May 1954
Mathematical Physics

Infeld, L. On the use of an approximation method in Dirac's electrodynamics. Bull. Acad. Polon. Sci. Cl. III. 1, 18-22 (1953).

The approximation method previously used by the author to study the equations of motion in General Relativity [Einstein and Infeld, Canadian J. Math. 1, 209-241 (1949); these Rev. 11, 59; Infeld and Wallace, Physical Rev. (2) 57, 797-806 (1940); these Rev. 1, 274] is applied to Dirac's new electrodynamics. The present note consists of general formal preparation which will be illustrated by specific examples in a future paper. *A. J. Coleman* (Toronto)

4/4/54

INFELD, L.

INFELD, L. Copernicus Theory and the Problem of Gravitation in Contemporary Physics. Problemy, Warszawa (Popular Science Magazine), 1953, v. 9, no. 7, p. 442

Infeld, L

Poland/Theoretical Physics - Quantum Electrodynamics B-5

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33764

Author : Infeld, L., Plebanski, J.

Institution : University of Warsaw

Title : Electrodynamics Without Potentials

Original Periodical : Acta Phys. Polon., 1953, 12, No 2, 123-134, English

Abstract : A general scheme was obtained for formulating a single theory of the electromagnetic field, characterized by an antisymmetric tensor $p_{\alpha\beta}$ (interpreted as D and H ) The simplest vector in this case will be $p^{\alpha\beta}_{,\beta} = (4\pi/c)j^{\alpha}$ . This equation is considered as a definition for the current. The Lagragian function H is considered in general as being dependent on the invariant $P = -1/4\ p_{\alpha\beta}\ p^{\alpha\nu}_{,\nu}$ and on the quantity $\rho = k(\varepsilon_{\alpha\beta}\ p^{\alpha\nu}_{,\nu}\ p^{\beta\mu}_{,\mu})^{1/2}$ , where k is some constant. The variational principle leads to a field equation

$$f_{\alpha\beta} = A_{\beta,\alpha} - A_{\alpha,\beta} ,$$

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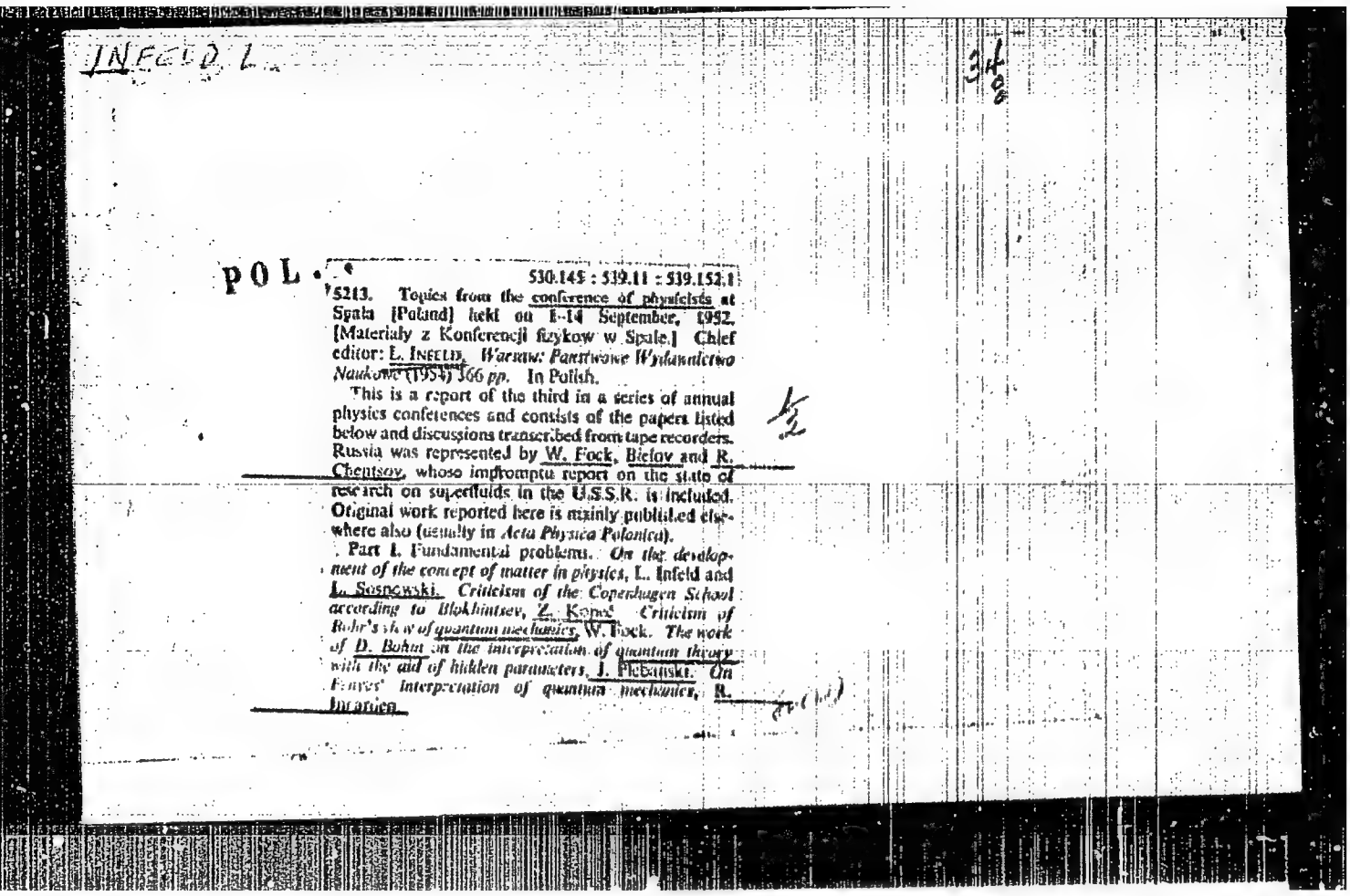
Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33764

where $f_{\alpha\beta} = -2\partial H/\partial p^{\alpha\beta}$ is interpreted as the vectors E and B , while $A_\alpha = (c/4\pi)\,\partial H/\partial j^\alpha$ is considered to be the potential resulting from the theory. The energy-momentum tensor has the form

$$T^\alpha_\beta = 1/4[(H + 1/2\ p^{\nu\mu} f_{\nu\mu})\delta^\alpha_\beta - p^{\alpha\nu} f_{\beta\nu}] + (1/c)[A_\beta j^\alpha - A_\nu j^\nu \delta^\alpha_\beta],$$

which satisfies the equation $T^\alpha_{\alpha\beta} = 0$ ; all these quantities should be expressed in terms of $F_{\alpha\beta}$ and their derivatives. It is shown that the proposed "Electrodynamics Without Potentials" is equivalent to the electrodynamics by Mie (Mie, G., Ann. Phys., 1912, 37, 511) in which the potentials are principal quantities. However, though the new Dirac electrodynamics can be formulated "without potentials" (Lagrangian $P + \rho/c$ ), it is outside the scope of the Mie electrodynamics.



INFELD, L.

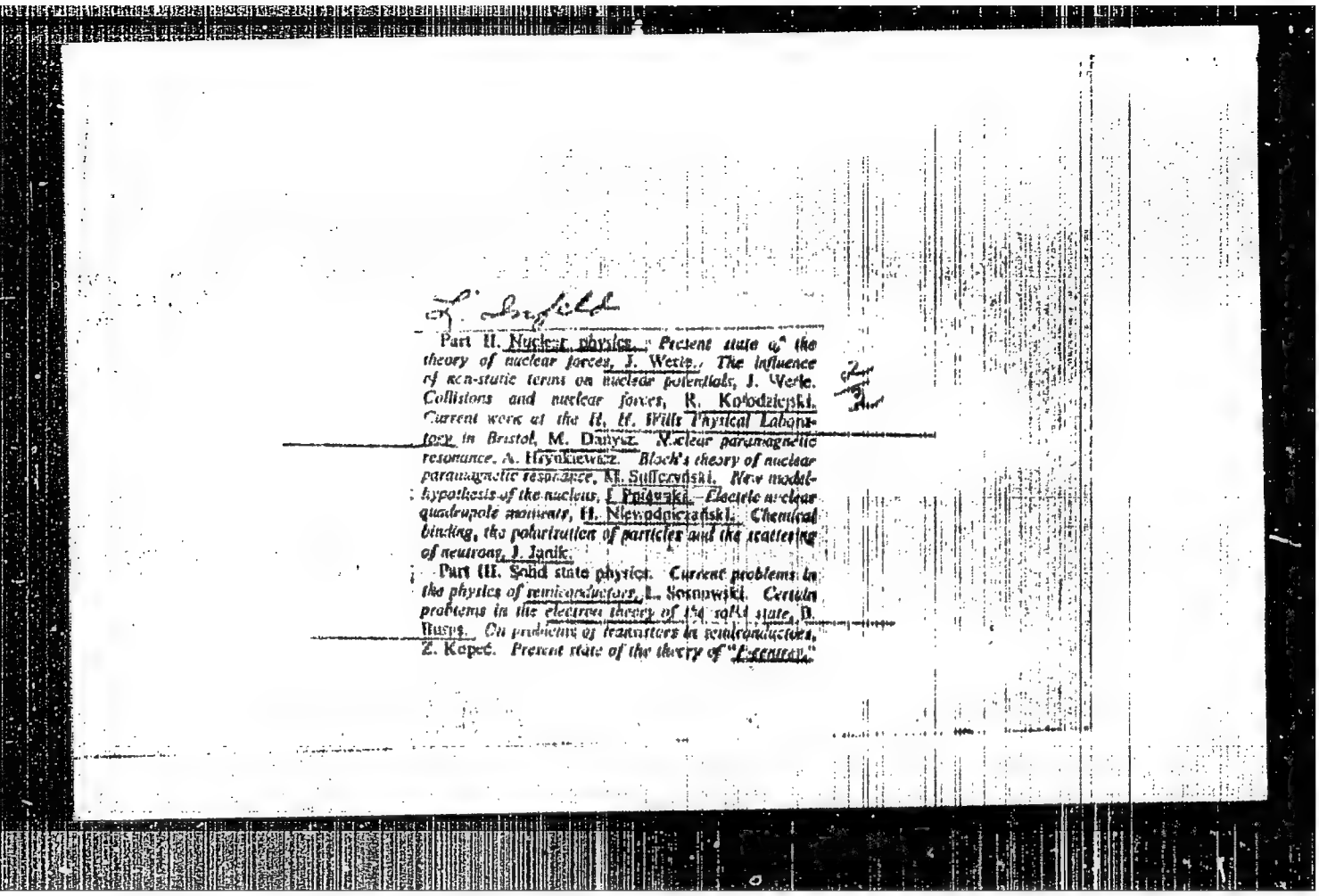
POL.

530.145 : 539.11 : 539.152.1

5213. Topics from the conference of physicists at Spala [Poland] held on 1-14 September, 1952. [Materiały z Konferencji fizyków w Spale.] Chief editor: L. INFELD. *Warsaw: Państwowe Wydawnictwo Naukowe* (1954) 366 *pp.* In Polish.

This is a report of the third in a series of annual physics conferences and consists of the papers listed below and discussions transcribed from tape recorders. Russia was represented by W. Fock, Bielov and R. Chentsov, whose impromptu report on the state of research on superfluids in the U.S.S.R. is included. Original work reported here is mainly published elsewhere also (usually in *Acta Physica Polonica*).

Part I. Fundamental problems. *On the development of the concept of matter in physics*, L. Infeld and L. Sosnowski. *Criticism of the Copenhagen School according to Blokhintsev*, Z. Kopeć. *Criticism of Bohr's view of quantum mechanics*, W. Fock. *The work of D. Bohm on the interpretation of quantum theory with the aid of hidden parameters*, J. Plebański. *On Fényes' interpretation of quantum mechanics*, R. Jurarien.



Part II. Nuclear physics. *Present state of the theory of nuclear forces*, J. Wess. *The influence of non-static terms on nuclear potentials*, J. Werle. *Collisions and nuclear forces*, R. Kołodziejski. *Current work at the H. H. Wills Physical Laboratory in Bristol*, M. Danysz. *Nuclear paramagnetic resonance*, A. Hrynkiewicz. *Bloch's theory of nuclear paramagnetic resonance*, M. Sułkowski. *New model-hypothesis of the nucleus*, J. Pniewski. *Electric nuclear quadrupole moments*, H. Niewodniczański. *Chemical binding, the polarization of particles and the scattering of neutrons*, J. Janik.

Part III. Solid state physics. *Current problems in the physics of semiconductors*, L. Sosnowski. *Certain problems in the electron theory of the solid state*, D. Bures. *On prediction of transistors in semiconductors*, Z. Kepeć. *Present state of the theory of "F-centres"*.

L. Infeld

W. Scislowski, *Researches of Soviet physicists in the field of superfluids*, R. Chentsov, *Theory of ferroelectrics of the type of* $BaTiO_3$, A. Piekara, Part IV. Field theory. *On the latest developments of classical electrodynamics*, L. Infeld. *A supplement to L. Infeld's lecture on electrodynamics without potentials*, J. Plebański. *The Hamiltonian [ electrodynamics formulated without potentials*, M. Sułkczyński. *Hamiltonian formulation of non-linear electrodynamics*, M. Sułkczyński. *The elementary law [of interaction] and non-linear electrodynamics*, J. Plebański. *The question of the motion of bodies in Einstein's theory of gravitation*, W. Fock. *New results in quantum field theory*, J. Rayski. *The question of an elementary length in physics*, J. Weyssenhoff. *Five-dimensional field theories (with special reference to Rumer's theory)*, R. Ingarden.

W. I. ŚWIĄTECKI

INFELD, L.

"Equations of Motion and Nonharmonic Coordinate Conditions," Byul, Polskoy akad. nauk, otd. 3,2, No 4, pp 161-164, 1954

The role of coordinate conditions in derivation of equations of motion of masses in a weak gravitational field is clarified. A transformation of coordinates, changing the field into a strong one, is always possible. The Newtonion equation of motion may be obtained from Einstein's equation as a first approximation, provided the gravitational field is weak and the motion quasistationary. (RZhFiz, No 6, 1955)

Sum. No. 681, 7 Oct 55

INFELD, L.

"Atomic and Hydrogen Bombs. Tr. from the Polish", P. 347, (KRIDLA VLASTI, Vol. 4, No. 15, July 1954, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

INFELD, L.

INFELD, L.

Einstein; reminiscent sketches, p. 349. (POSTEPY FIZYKI, Warszawa, Vol. 5, no. 3, 1954.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

INFELD, L.

INFELD, L.

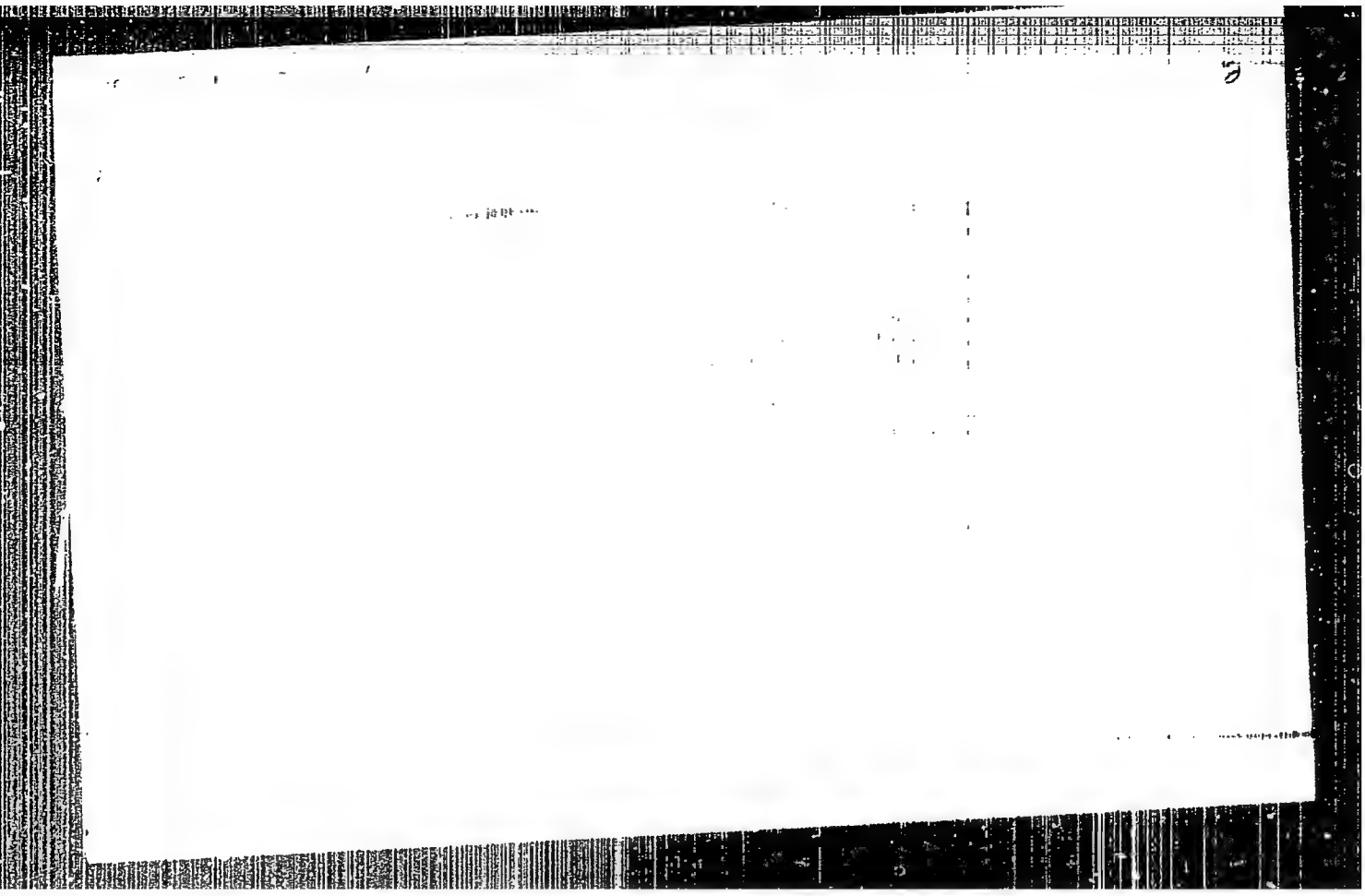
Role of the theory of relativity in science, p. 355.(POSTEPY FIZYKI, Warszawa, Vol.5, no. 3, 1954.)

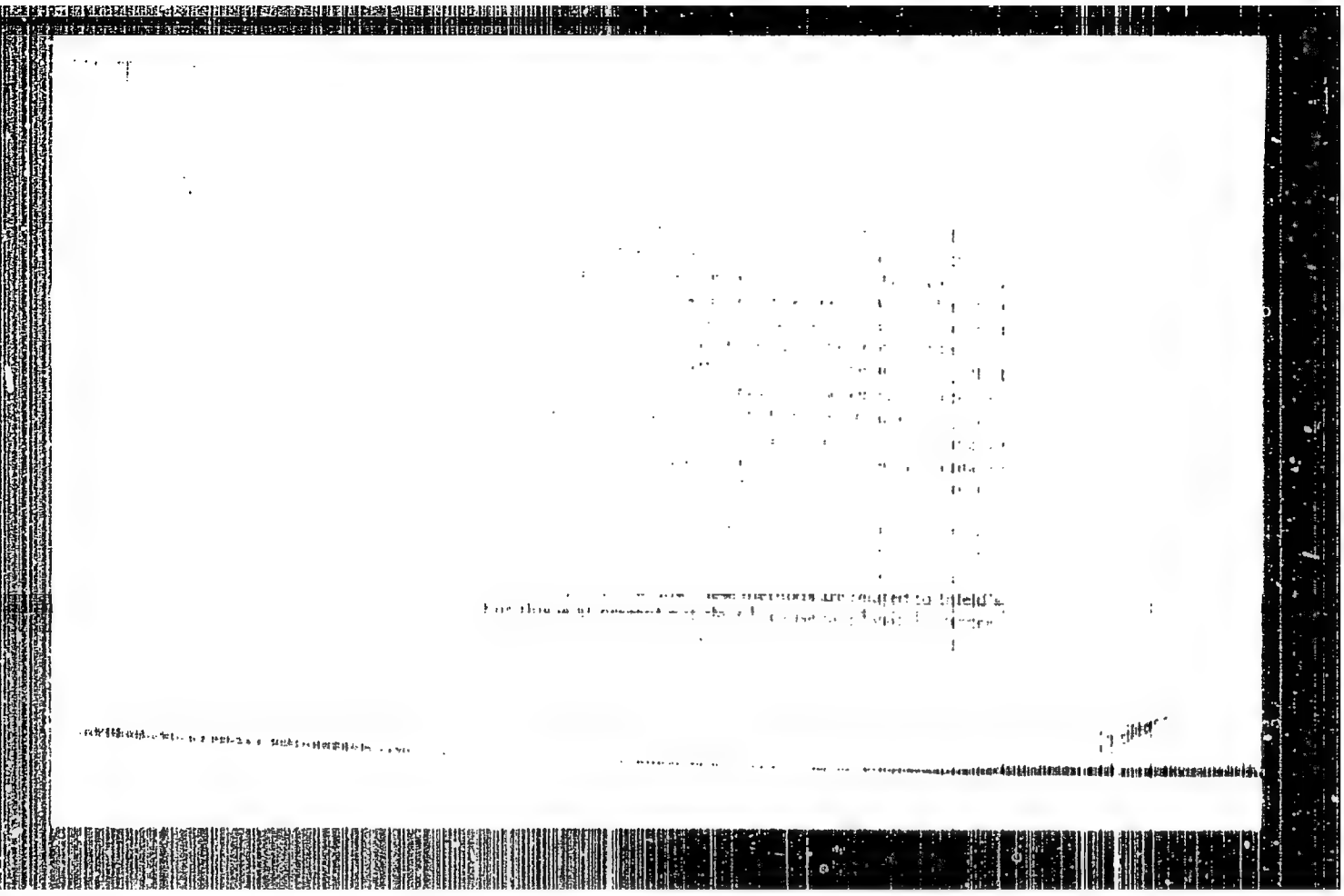
SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

INFELD, Leopold.

To Albert Einstein on his 75th birthday. Biul. VFNR no. 10: 245-248 Ag-O '54. (MLRA 8:2)

1. Chlen Ispolnitel'nogo komiteta Vsemirnoy federatsii nauchnykh rabotnikov.
(Einstein, Albert, 1879 - 1955)





APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000618610015-3"

INFELD, L.

From Copernicus to Einstein. p. 209. Vol. 1, no. 3, 1955.
Warszawa

SERIA B: PRZYROD A NEOZYWIONA

SOURCE: East European Acession List (EEAL) Library of Congress
Vol. 5, no. 8, August 1956

INFELD, L.

Plebanski, J. Unitary transformations and spinor calculus. In English, p. 95. BULLETIN, Varsovie, Vol. 3, no. 2, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

INFEL'D, L.

Category : USSR/Theoretical Physics - Quantum Field Theory B-6

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 2951

Author : Infel'd, L.
Inst : Institute of Theoretical Physics, Polish Academy of Science
Title : Equations of Motion for Linear Field Theories

Orig Pub : Byul. Pol'sk. AN, Otd. 3, 1955, 3, No 4, 211-214

Abstract : It is noted that the equations of motion result from the field equations if the latter are nonlinear: in the case of linear equations, this does not take place. However, it becomes possible to derive the equations of motion from the field equations if the equations of the gravitational field are added to the system of linear equations. For example, in the case of the electromagnetic or meson field, it is necessary to start out with a system consisting of the following equation $R_{\alpha\beta} - \frac{1}{2} g_{\alpha\beta} R = -8\pi k (M_{\alpha\beta} + E_{\alpha\beta})$ and the equations of the electromagnetic or meson field. Here $M_{\alpha\beta}$ and $E_{\alpha\beta}$ are the tensor energy-momentum densities of the moving particles and R is the electromagnetic (or meson) field

Card : 1/2



Category : USSR/Theoretical Physics - Quantum Field Theory B-6

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 2951

The equations of motion are obtained for point masses in the following form:

$$(dx/ds)\int (M^{\mu\nu} + E^{\mu\nu})_{,\nu}\, d_{(3)}x = 0$$

In the presence of only a single particle $M^{\mu\nu}$ assumes the form: $M^{(1)\mu\nu} = m\dot{\xi}^{\mu}\dot{\xi}^{\nu}\delta_{(3)}$, where m is the mass of the particle, $\xi^s = \xi^s(\xi^0)$ are the spatial coordinates of the particle, and $\delta_{(3)}$ is the three-dimensional Dirac function; the dot denotes differentiation with respect to $\xi^0 = t$. In the cartesian coordinate system, it follows from (1) that

$$m = m_0 \frac{dx}{ds};\quad \frac{dm_0}{ds} = -\frac{dx}{ds}\frac{d\xi_{\alpha\alpha}}{ds}\int E^{\mu\nu}_{,\nu}\, d_{(3)}x$$

so that in general the invariant mass $m_0$ is a function of the intrinsic time s.

Card : 2/2

INFELD, L. Poland

Equations of motion.
Lecture delivered on 11th October, 1954 in Berlin during a celebration of the centenary of Riemann's work.

SO: Progress in Physics, Poland, Vol. 6, #2, 1955, Unclassified.

INFELD, L.

INFELD, L. History of the theory of relativity. p. 96.

Vol. 6, no. 4, July 1955
FIZIKAI SZEMLE
SCIENCE
HUNGARY

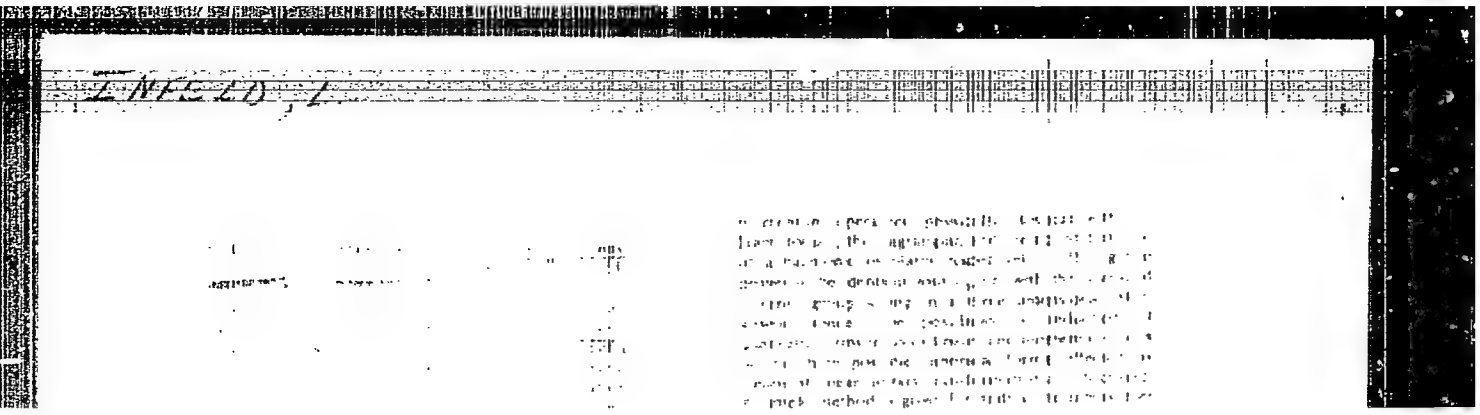
So: East European Accessions, Vol. 5, No. 9, Sept. 1956

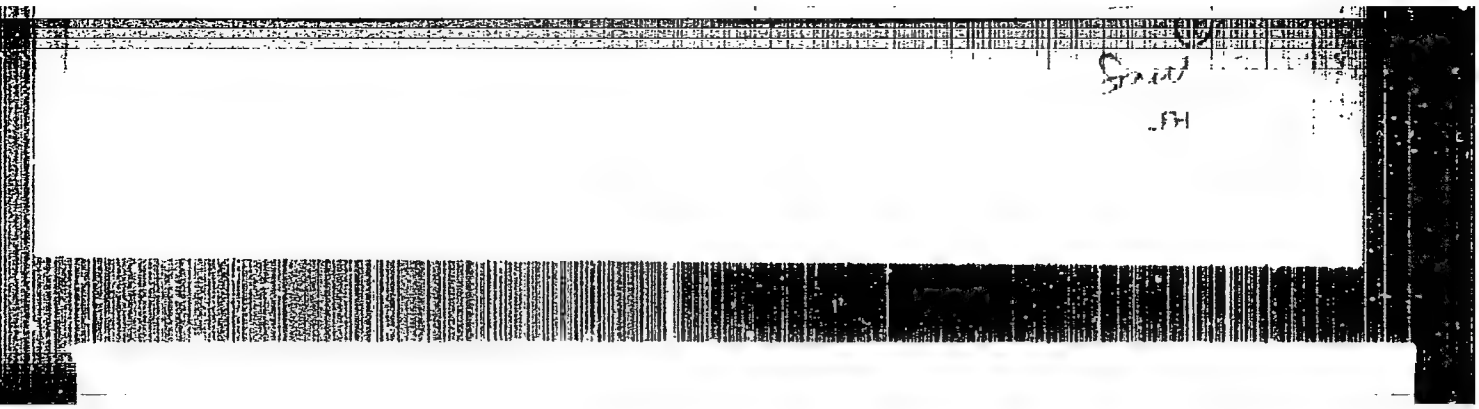
Infeld, Leopold. Einige Bemerkungen über die Relativitätstheorie. Ann. Physik (6) 16 (1955), 239–240.

This is a discussion of invariance in classical and relativistic mechanics, almost without equations. Special attention is paid to the significance of coordinates; an exposition of the two-body problem in general relativity shows the irrelevance of Fock's harmonic coordinate condition [Acad. Sci. U.S.S.R. J. Phys. 1 (1939), 81–116; MR 1, 183] at the Newtonian and first post-Newtonian stages of approximation, the essential assumption being the EIH approximation scheme for the metric tensor [cf. L. Infeld, Acta Phys. Polon. 13 (1954), 187–204; MR 16, 531].

The paper is complementary to an earlier paper by the same author [Canad. J. Math. 5 (1953), 17–25; MR 14, 806].

*F. A. E. Pirani* (London).





INFEL'D, L.

History of the development of the theory of relativity. Usp.fiz. nauk 57 no.2:193-203 O '55. (MLRA 9:1)
(Einstein, Albert, 1879-1955) (Relativity (Physics))

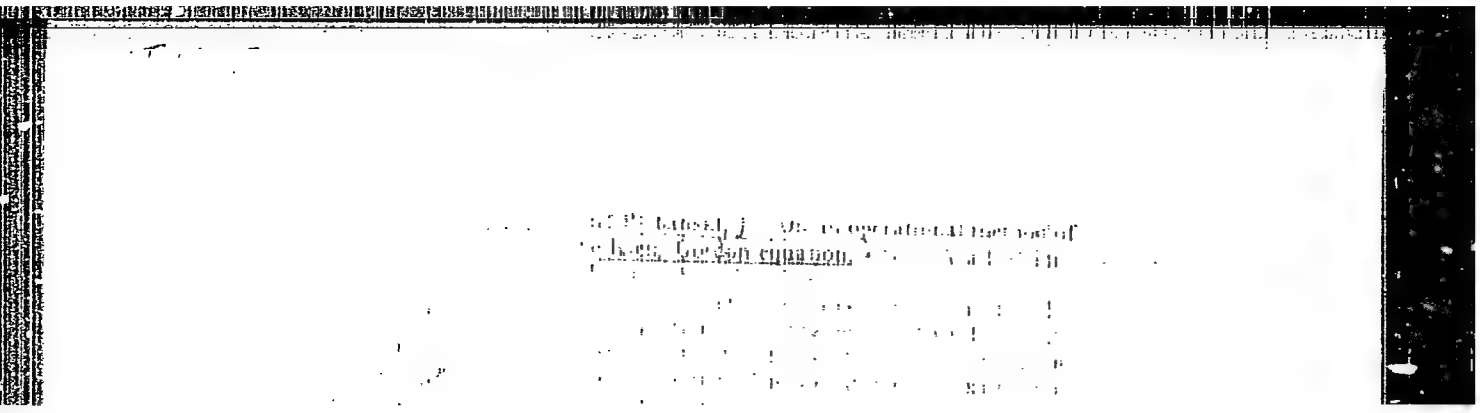
INFELD, LEOPOLD

Moje wspomnienia o Einsteinie. Warszawa, Iskry, 1956. 148 p.

SOURCE: East European Acession List (EEAL) Library of Congress
Vol. 5, no. 8, August 1956

EINSTEIN, Alfred; INFELD, Leopold; SUVOROV, S.G.[translator]; UMSHKOVTSEV, V.A., redaktor; LIVSHITS, B.L., redaktor; TUMARKINA, N.A. tekhnicheskiy redaktor

[The evolution of physics; the growth of ideas from early concepts to relativity and quanta. Translated from the English] Evoliutsiia fiziki; razvitie idei ot pervonachal'nykh poniatii do teorii otnositel'nosti i kvant. Perevod s angliiskogo so vstup. stat'ei S.G. Suvorova. Izd. 2-oe. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 279 p. (MLRA 10:4)
(Physics--History) (Relativity (Physics))
(Quantum theory)



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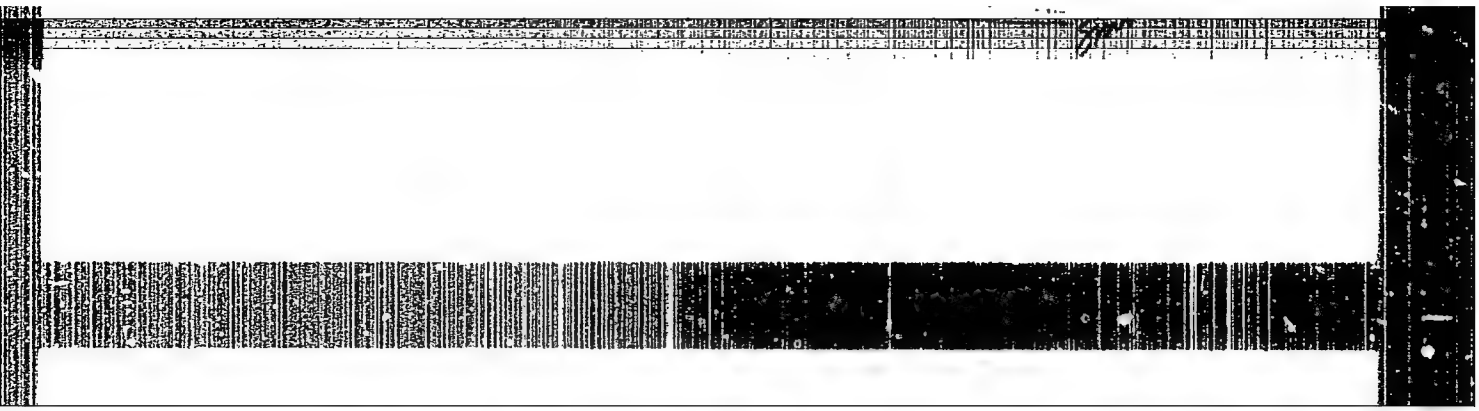

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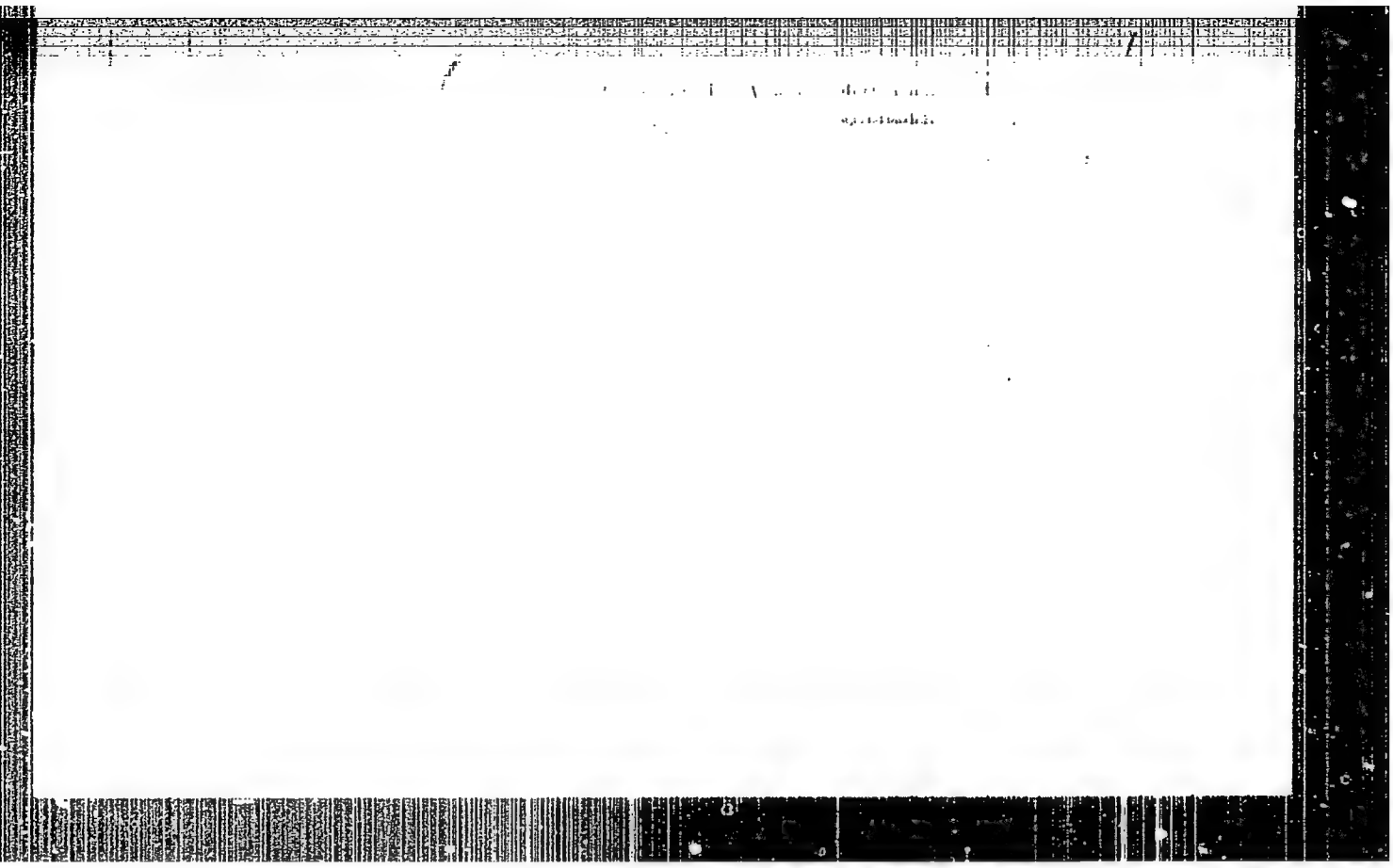

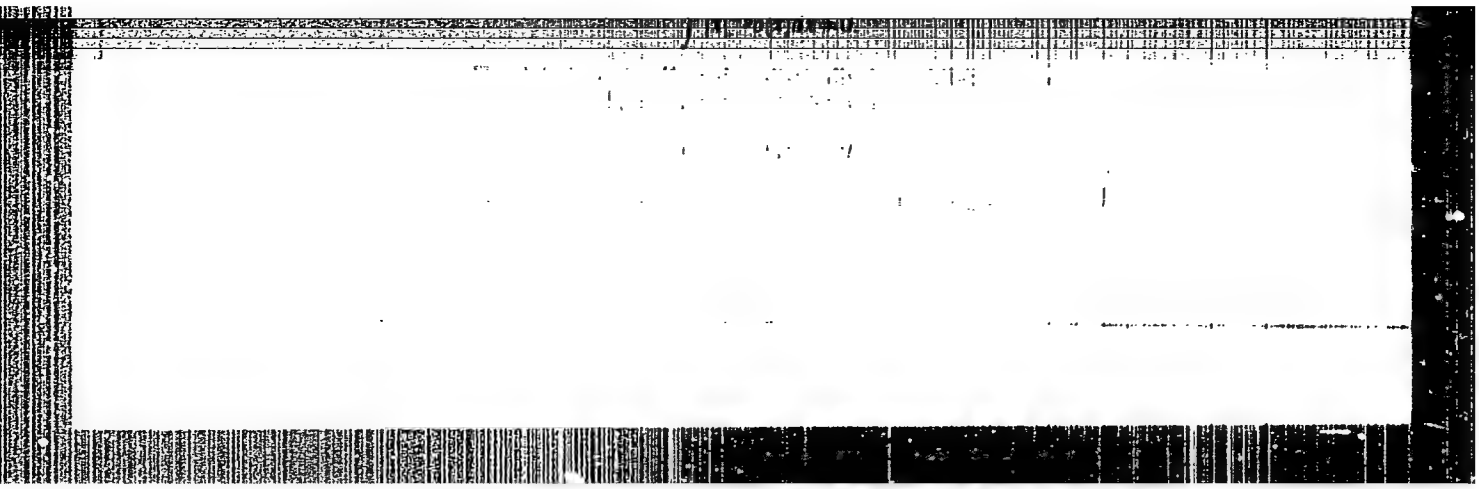

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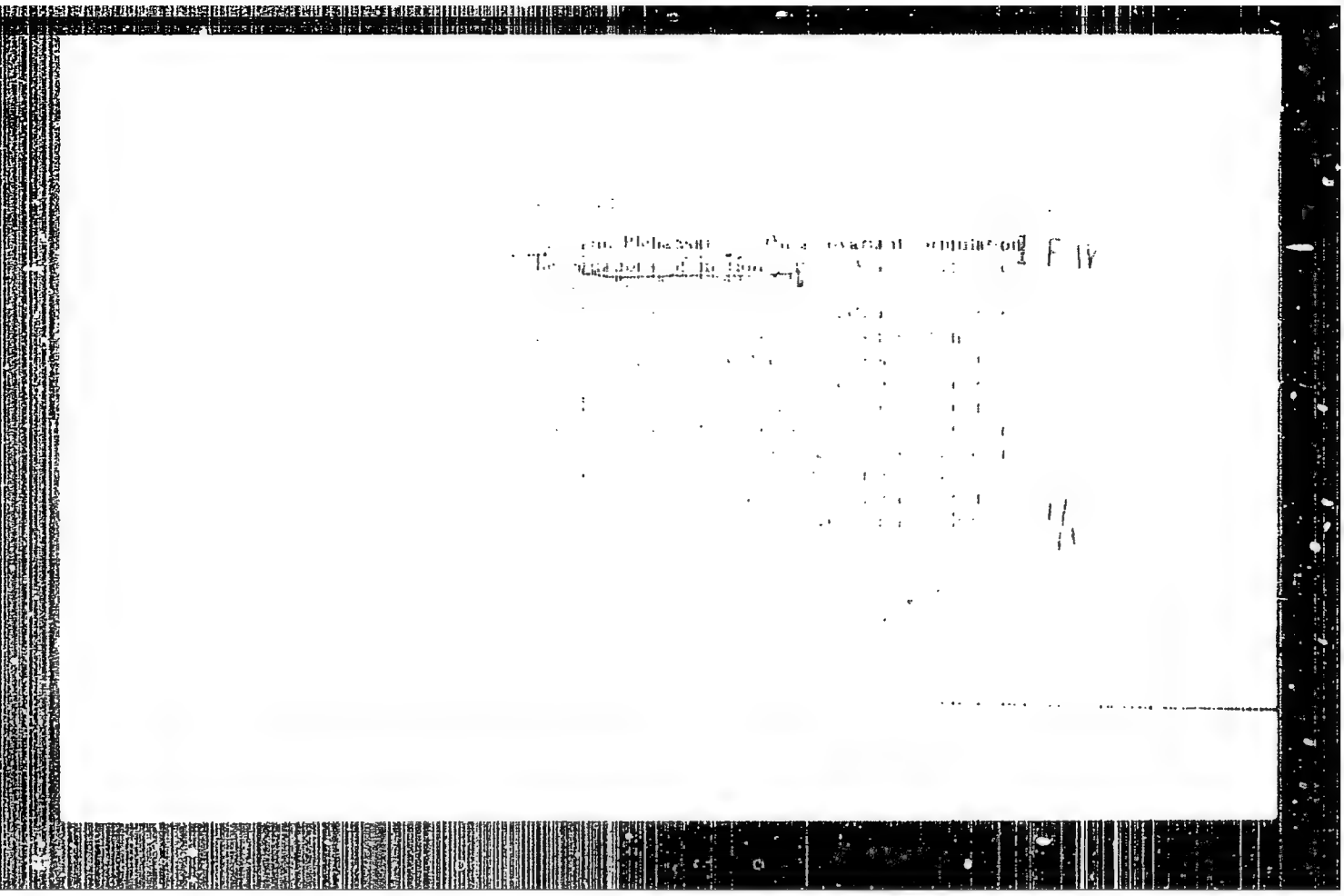
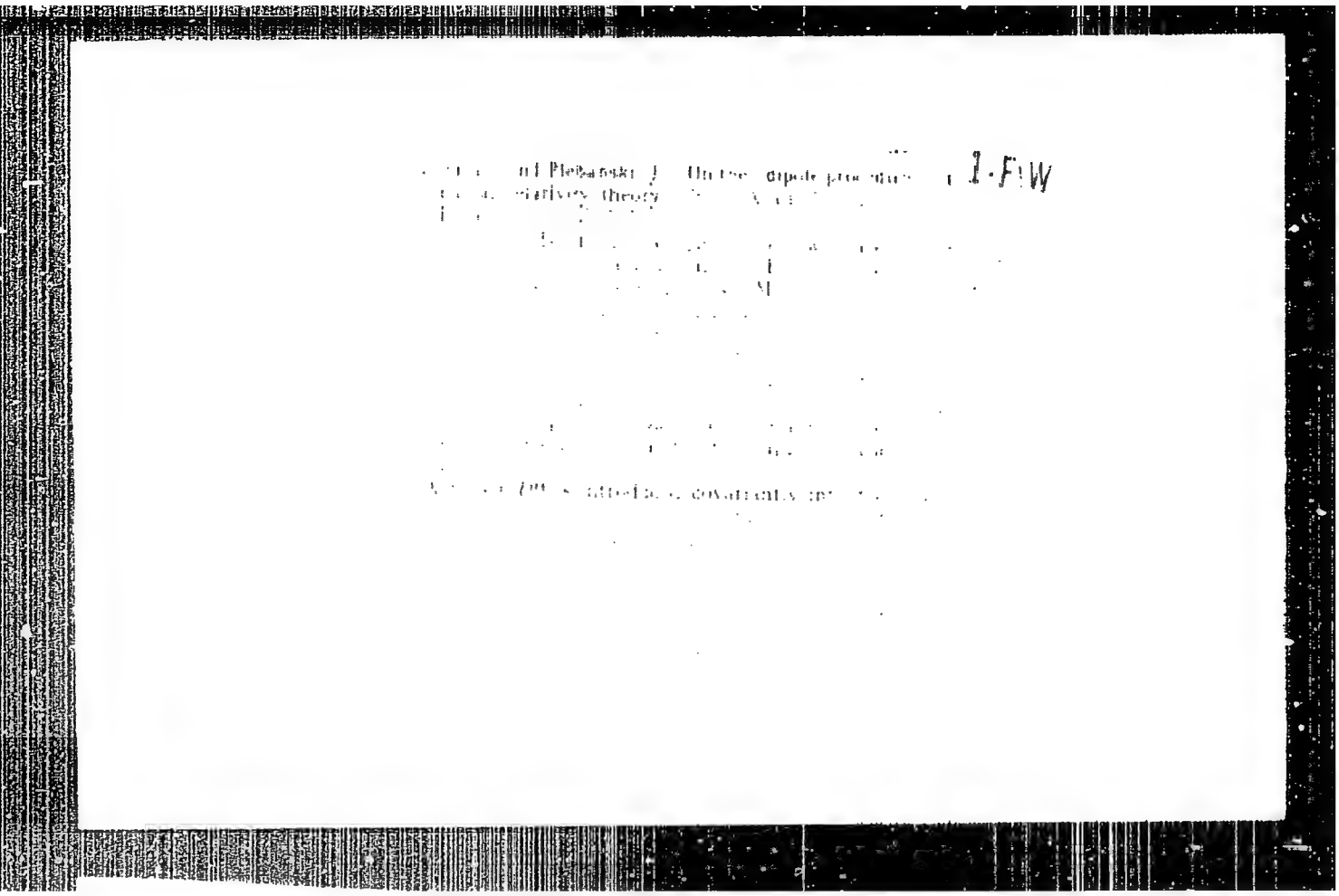
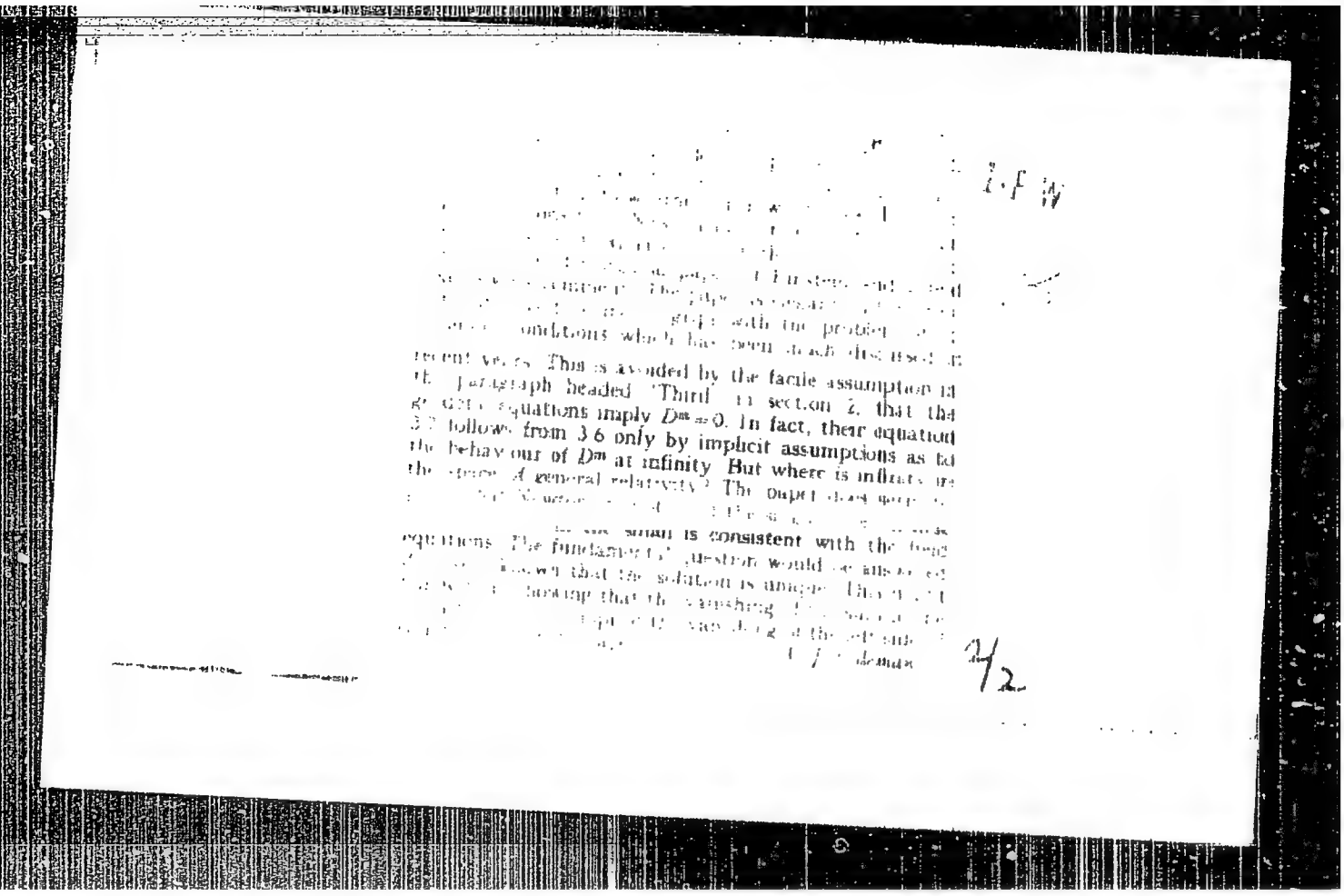
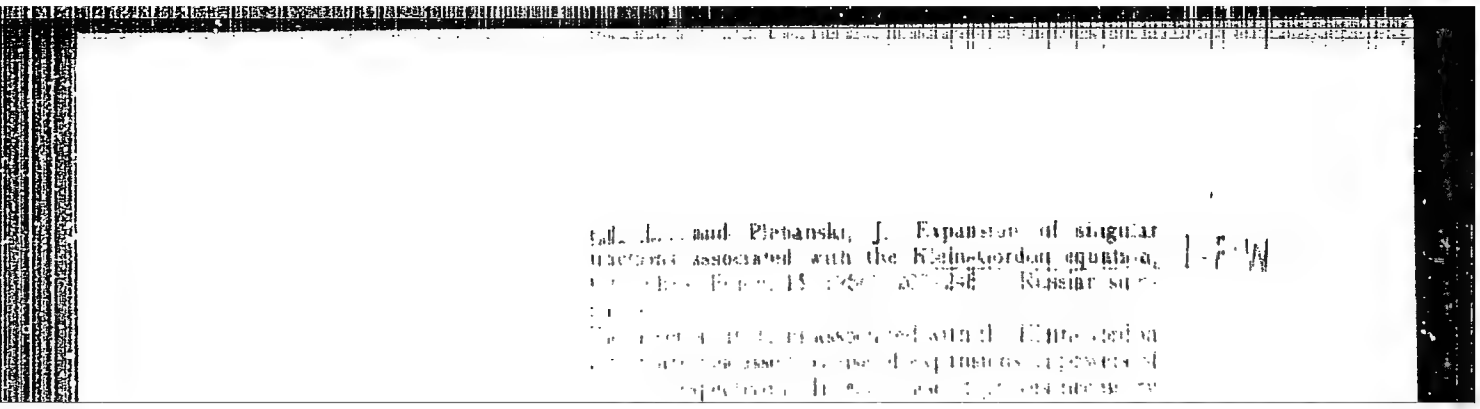


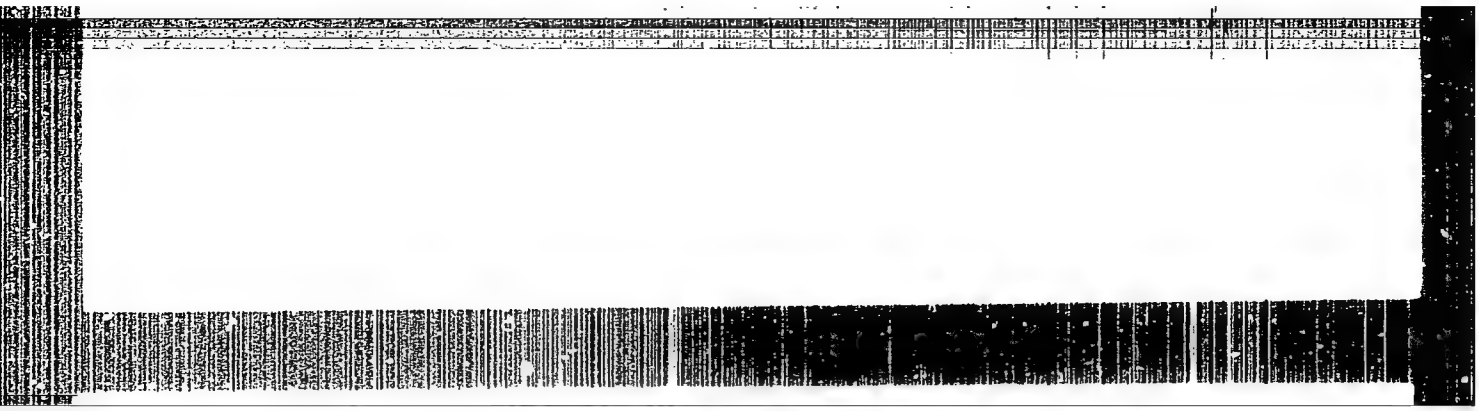




INFELD, L.

Moje wspomienia o Einsteinie (My reminiscences about Einstein), by L. Infeld. Reported in New Books, (Nowe Ksiazki), No. 6, March 15, 1956.





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INFEL'D, Leopold

My recollections of Einstein. Usp.fiz.nauk. 59 no.1:135-184 My '56.
(Einstein, Albert, 1879-1955) (MLRA 9:12)

INFELD, L.

POLAND/Theoretical Physics - General B-1

Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 9892

Author : Infeld L., Plebanski, J.
Inst : Institute of Physics, Polish Academy of Sciences; The University, Warsaw, Poland.
Title : On a Further Modification of Dirac's -Functions

Orig Pub : Bull. Acad. polon. sci., 1957, Cl, 3, 5, No 1, 51-54

Abstract : Continuing their earlier work (Ref Zhur Fizika 1957, No 11, 27002), the authors introduce a three-dimensional $\delta$ (x) function of a new type, which satisfies the condition

$$\int_{\Omega(0)} \alpha(x) x^{\beta}(x) [x]^{-\rho} = \omega_\rho (\rho = 1, \nu, \ldots, k),$$

where $\Omega$ (0) is an arbitrary vicinity of the point $x = 0$, $\omega_0 = 1$, and $\omega_\rho$ are pre-assigned numbers. An example of a $\delta$ (x)-function of this tpye is given.

Card : 1/1

INFELD, L.

POLAND/Theoretical Physics - Unified Field Theory B-2



Abs Jour : Ref Zhur - Fizika, No 3, 1958, No 5132

Author : Infeld, L.
Inst : Institute of Physics, Polish Academy of Sciences
Title : On the Lagrangian in Special Relativity Theory

Orig Pub : Bull. Akad. polon sci., 1957, Cl. 3,5, No 5, 491-495

Abstract : The relativistic equations of motion are derived from the variational principle. For this purpose the Lagrangian is chosen in the form $L^* = L(x_\mu, x'_\mu) + (1/2)\gamma (x'_\nu x'_\nu + 1)$, where $\gamma$ is a certain scalar function, $x'_\mu = dx_\mu/ds$. By varying the action integral independently with respect to $x_\mu$ and $\gamma$ and then eliminating $\gamma$ it is possible to obtain the following Euler-Lagrange equations:

$$\left(\frac{\partial L'}{\partial x_\mu}\right) - \left(\frac{\partial L}{\partial x_\nu}\right) - \left(\frac{\partial L}{\partial x'_\rho} x'_\rho x_\nu\right) + \left(L x'_\nu\right) = 0$$

Card : 1/2

Card : 2/2

PHASE I BOOK EXPLOITATION POL/4355

Polskie towarzystwo matematyczne

Prace Matematyczne, Seria I, II, 2 (Mathematical Transactions, Series I, vol. II.2) Warszawa, Państwowe wyd-wo naukowe, 1958. 195 p. Errata slip inserted. 1,000 copies printed.

Editorial Board: Władysław Orlicz (Chief Ed.), Stefan Drobot (Deputy Chief Ed.), Adam Bielecki, Stanisław Hartman, Jan Mikusiński, Roman Sikorski, Marceli Stark, Hanna Szmuszkowicz, Krzysztof Tatarkiewicz, and Włodzimierz Wrona.

PURPOSE: This book is intended for mathematicians

COVERAGE: The book contains 14 articles dealing with algebra, the theory of games, analysis, geometry, and two general mathematical topics. Summaries appear in Russian and English. No personalities are mentioned. References accompany individual articles.

Card 1/3

TABLE OF CONTENTS:

Mathematical Transactions (Cont.) POL/4355



AVAILABLE: Library of Congress

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INFELD, L.

My reminiscences of Wladyslaw Natanson.

p. 3. (KOSMOS. SERIA B: PRZYWODA NIEOZYWIONA.) (Warszawa, Poland) Vol. 4, no. 1, 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

INFELD, L.

The genealogy of Sputnik.

p. 9. (KOSMOS. SERIA B: PRZYWODA NIEOZYWIONA.) (Warszawa, Poland) Vol. 4, no. 1, 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

INFELD, L.

"Planck's hundredth anniversary"

p. 205 (Kosmos, Seria B; Przyroda .Nieozywiona, Journal on natural sciences with the exception of biology issued by the Copernicus Society of Polish Naturalists, Vol. 4, no. 3, 1958, Warsaw, Poland)

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 1, Jan. 59.

POLAND/Nuclear Physics - General Problems. C

Abs Jour : Ref Zhur Fizika, No 2, 1960, 2726

Author : Infeld, Leopold
Inst : -
Title : Impressions of the Second International Conference on Atomic Energy in Geneva

Orig Pub : Kosmos (Polska), 1958, B4, No 4, 273-275

Abstract : No abstract.

Card 1/1



POLAND/Nuclear Physics - Physical Base of Nuclear and Thermonuclear Technology. C

Abs Jour : Ref Zhur Fizika, No 1, 1960, 614

Author : Infeld, Leopold
Inst : -
Title : Impressions of the Second Conference on Atomic Energy in Geneva

Orig Pub : Nukleonika, 1959, 4, No 1, 1-4

Abstract : No abstract.

Card 1/1

INFELD, L.

A new form of the geodesic line equation. Bul Ac Pol mat 8 no.8: 559-561 '60.

1. Institute of Physics, University, Warsaw and Institute of Physics, Polish Academy of Sciences.

(Geodesy) (Equations)

INFELD, L.

SURNAME (in caps); Given Names

Country: Poland

Academic Degrees: Not stated

Affiliation: Institute of Physics (Instytut Fizyki), Polish Academy of Sciences (Polska Akademja Nauk)

Source: Warsaw, Bulletin de l'Académie Polonaise des Sciences, Série des Sciences Mathématiques, Astronomiques et Physiques, Vol 9, No 2, Feb 61, pp 93-97.

Data: "The EIH and the k-Approximation Methods."

INFELD, L.

On the most Cartesian-like coordinate system. Bul Ac Pol Mat 9 no.4: 299-302 '61.

1. Institute of Theoretical Physics, Warsaw University.

INFELD, L.

Is Planck's constant a constant in a gravitational field? Bul Ac Pol Mat 9 no.8:617-620 '61.

1. Institute of Theoretical Physics, University, Warsaw.

INFELD, Leopold; NAGY, Tibor [translator]

Gravitation, 1962. Fiz szemle 12 no.11:354 N '62.

INFELD, Leopold

On the relativity theory of gravitation. Problemy 18 no.9:614-615 '62.

INFELD, L.

"Uniformly accelerated" motion and relativity. Acta physica Pol 23 no.1:69-75 Ja '63.

1. Physics Institute, University, Warsaw, and Physics Institute, Polish Academy of Sciences, Warsaw.

INFELD, L.

The equations of motion of a radiating electron and its Lagrangian. Acta phys Hung 17 no.1/2:7-14 '64.

1. Institute for Theoretical Physics, Warsaw University, Warsaw, Poland.

INFELITSYN, A.,( Engr-Lt Col)

Coauthor with Engr-Lt Col. I. CHEPELEVSKIY* of article, " Tent for Repairing Equipment," concerning the construction of a tent to be used in the field when repairing equipment. (Tankist, Moscow, No 4, Apr. 1954)

SO: SUM No 239, 13 Oct. 1954

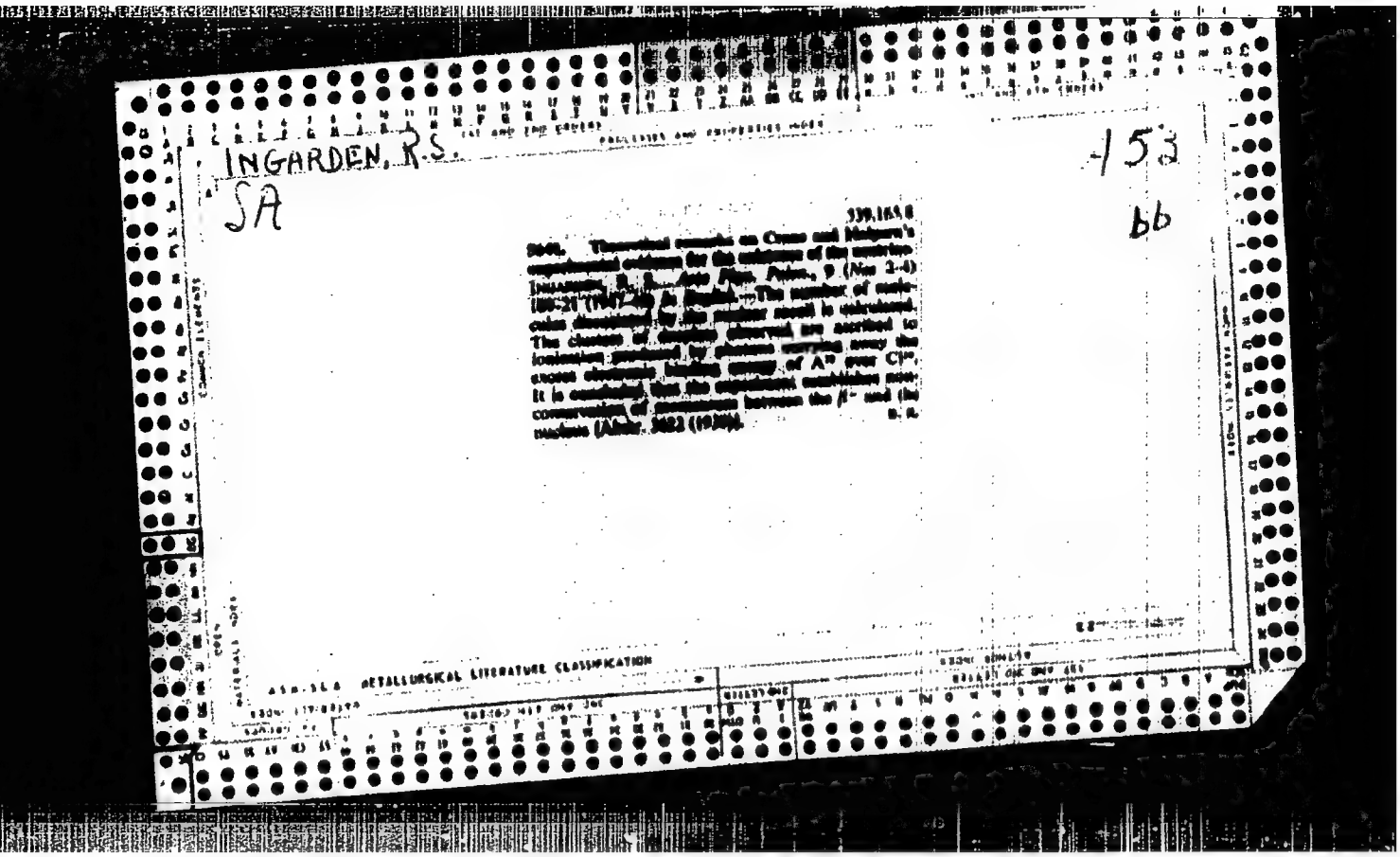
INGAMDZHANOV, N.I.; KONTUASHVILI, B.Ya., red.; OSIPENKO, V., tekhn. red.

[Practical manual on needle therapy] Prakticheskoe rukovodstvo po igloterapii. Tashkent, Gos. med. izd-vo M-va zdravookhraneniia UzSSR, 1960. 138 p. (MIRA 14:7)

(ACUPUNCTURE)

STEL'BOYM,P.S., inzhener; GENUSOV,A.Sh., inzhener

"Preparing yarn for the knitting industry." L.P.Ignatova.
Reviewed by P.S.Sel'boim, A.Sh.Genusov. Leg.prom. 15 no.6:
52-53 Je '55. (MLRA 8:8)
(Knit goods industry) (Ignatova,L.P.)



IEGARDEN, R.S.

Equations of motion and field equations in five-dimensional unified relativity theory. Dokl. Akad. Nauk SSSR 88, No.5, 773-6 '53. (MLRA 6:2)
(PA 56 no.671:7416 '53)

States that in the theory of relativity there exist two different methods for deriving the eqs of motion from the field eqs; the method of Einstein and Infeld on the one hand and the method of Fok on the other. Attempts to show that these two views can agree to a certain extent in a 5-dimensional "unified" theory of relativity, in which a new point of view is given to the problem. Presented by Acad V. A. Fok 20 Dec 52. Indebted to V.A.Fok for his helpful remarks made a t the conference of Polish physicists at Spala.

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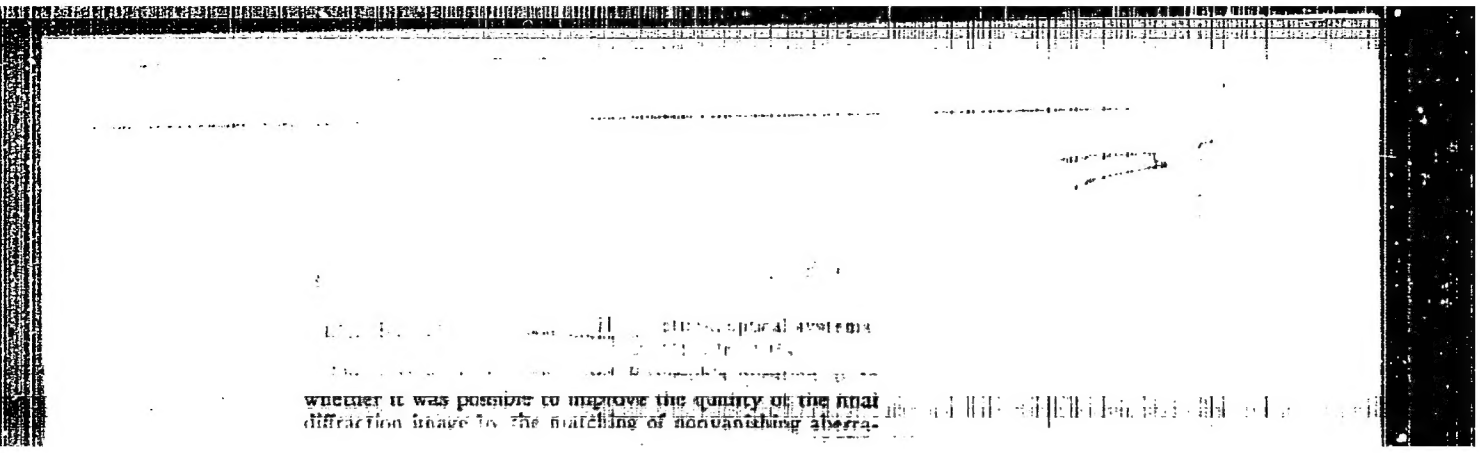
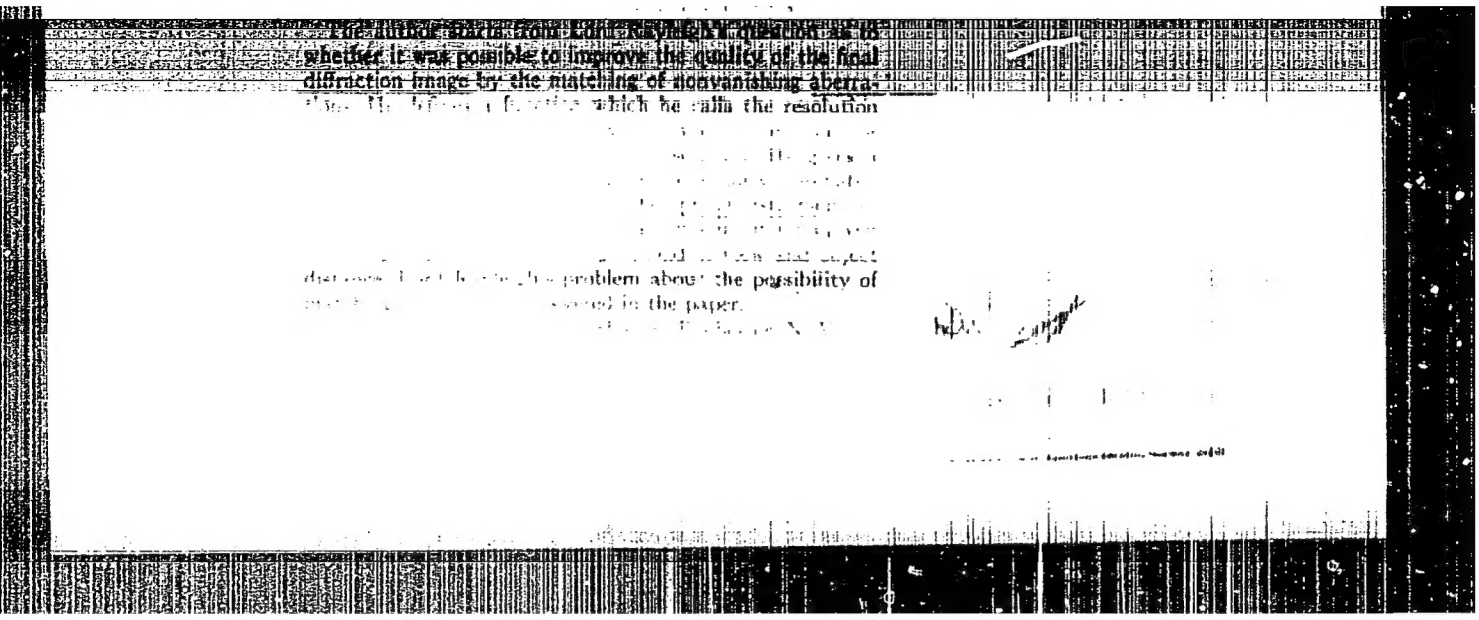


whether it was possible to improve the quality of the final diffraction image by the matching of nonvanishing aberra-



The author starts from Lord Rayleigh's question as to whether it was possible to improve the quality of the final diffraction image by the stateling of nonvanishing aberrations which he calls the resolution

problem about the possibility of

in the paper.

INGARDEN R.S.

POLAND/Optics - Optical Technology K-4

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 9157

Author : Ingarden, R.S., Okhman, O.
Inst : Mathematics Institute, Academy of Sciences, Warsaw, Poland
Title : Optimum Optical Systems

Orig Pub : Syul. Pol'skoy AN, otd. 3, 1954, 2, No 6, 275-280

Abstract : Determination of a criterion that characterizes a system with the best image quality. Systems are considered with axial symmetry, consisting of homogeneous and isotropic media. For the sake of simplicity, non-self-illuminating objects are taken, and the investigation is carried out in the meridional plane. The action of an optical system is represented, using Mandel'shtam's example, as an integral equation that transforms the amplitude in the plane of the object into an amplitude in the plane of the image, the kernel of which depends only on the optical system. It is shown that an optical system having no aberration is not ideal from the point of view of the wave theory of light. Only a system satisfying definite conditions will reproduce the object with absolute similarity. The

Card : 1/2

INGARDEN, R.

Bulletin - Vol. 2, no. 7, 1954.

Embedding Finsler spaces in a Minkowski space. p. 305.

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 9, Sept. 1955
Uncl.